University of Alberta

The Effects of of a University Education on Social and Economic Attitudes

by

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ABSTRACT

This research examines some of the social functions of universities, as institutions that can affect students' social attitudes and values. According to the assumptions of two competing theories, a university education has either a positive effect on attitude change since it fosters a more enlightened, liberal-thinking and tolerant populous (enlightenment theory), or it reproduces inequality as students are socialized to identify with the dominant value of individualism perpetuated within the university (reproduction theory). Change in a variety of social and economic attitudes as a function of amount of university education was examined using panel survey data (1985-1992) from a study of high school seniors. This study revealed that: 1) Exposure to a university education has a liberalizing effect on attitudes towards minority groups; 2) Business students tend to become more conservative in their views towards minority groups and economic inequality; 3) The first few years of university have the strongest liberalizing impact on students' attitudes, but there appears to be some retrenchment of these new-found views once students are exposed to the labour market after attending university, and; 4) The university can be distinguished from other post-secondary institutions in its socializing role of enlightening students.

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CHAPTER 1

INTRODUCTION

INTRODUCTION

Within a context of government fiscal restraint and global competition, the role and significance of the university is changing. Where it was once viewed primarily as a site for students to receive an education in the broadest sense, emphasis has recently turned towards developing the instrumental skills and knowledge of students in their preparation for the labour market. While this is an important role of the university, there may be other social benefits of higher education that have implications for the development of Canadian society. Accordingly, this research examines some of the social functions of universities, as institutions that reinforce values or create new ones.

While there has been much research on the important role of elementary and secondary schools in teaching values to the young, the socializing effects of postsecondary education have received much less attention and are, therefore, less clearly understood. There is growing acceptance in the research literature that socialization continues after childhood into adulthood. Research shows that experiences during young adulthood can dramatically affect attitudes and values[1] such that this point in the life span has become known as the 'impressionable years' period (Alwin, Cohen and Newcomb,1991; Jennings and Niemi, 1975; Cutler and Kaufman, 1975). Participation in the university system as a young adult is a comprehensive life-course event. Students are exposed to a blend of knowledge, ideas and social interactions that comprise their educational experience. Thus, it is reasonable to conclude that the intensity of this educational passage could affect the values and belief systems held by students.

THEORETICAL ISSUES

Social analysts offer two basic accounts for students' value shifts that parallel two classical paradigms in sociology. The first theory is grounded in the functionalist position that education contributes to equality. Proponents of this perspective argue that education is one of the most important processes for the cultivation of rational and achieved bases of equality. By linking occupation with educational attainment, a system of meritocracy replaces irrational and ascribed determinants of socioeconomic location. Related to this theory are the predictions of Bell (1963), Gouldner (1979) and others that post-industrialism will bring a decline in social inequality through education by creating a new class of liberal and critical intellectuals. From this perspective, university education is depicted as having a positive impact on social values held by its participants since it fosters a more enlightened, liberal-thinking and tolerant populous (Selznick and Steinburg, 1969; Berry, Kalin and Taylor, 1977; Hyman and Wright, 1979; Lipset, 1979, 1981; Economic Council of Canada, 1991). This perspective will be referred to in this thesis as the *education as enlightenment theory.*

Underlying the opposing perspective is the Marxist notion that education is constructed to meet the needs of capital by reproducing existing inequalities (Collins, 1971; Bowles and Gintis, 1976). Along a similar vein, higher education is viewed as an agency of social control that works to reinforce the status quo and protect existing privileged positions. From this perspective, students are socialized to accept existing relations of dominance and subordination, thereby reproducing social inequalities (Curtis and Lambert, 1976; Jackman, 1978; Gergen and Gergen, 1981; Baer and Lambert, 1982 and 1990; Jackman and

Muha, 1984; Kane, 1995). In the literature, this perspective is referred to as the *reproduction of inequality theory*.

Other investigators have identified an important contingency by recognizing the diversity of organizational structure, curriculum and community members within the university. This perspective maintains that the student population cannot be treated as a homogenous group. Rather, each type of university program carries its own set of ideologies that will differentially affect students' value systems. Students in the social sciences, for example, may become more liberal while students from commerce or business may become more conservative (Guimond, Palmer and Begin, 1989). Thus, according to this approach, higher education can have both a conservative and a liberal effect, depending on the area of study.

EMPIRICAL RESEARCH AND STUDY DESIGN

Dating back to the early 1930s, there exists an extensive body of research examining the effects of education on social attitudes. Much of the early work upholds the arguments of enlightenment theorists by finding a positive link between education and tolerance towards racial minorities. Since the 1960s, however, the domain of attitudes examined has broadened to include issues of class and, more recently, gender. These newer studies are often conflicting in their conclusions making it difficult to firmly establish a causal relationship. It is also not clear which types of attitudes are more likely to change, why they might or might not change, and what contingencies might lead to change.

Consequently, the first purpose of this study is to more firmly establish the occurrence of attitude shifts as a result of university education. Second, this work will attempt to more clearly delineate which attitudes change and what

these changes mean in terms of larger value shifts. Finally, an attempt will be made to determine the conditions under which attitudes change.

This will first involve establishing whether or not value shifts occur as measured by students' attitudes towards an assortment of social groups and issues before and after their exposure to university. Further, by examining change in attitudes over time we will be able to determine if the university has; 1) a liberalizing effect as predicted by enlightenment theory, 2) a conservative effect as predicted by reproduction theory, or 3) both a liberalizing and conservative effect, depending on the discipline of study.

Specifically, the analysis tests for possible changes in social and economic attitudes by comparing youth at various educational stages. To test enlightenment and reproduction theories these attitudinal changes are compared between university and non-university youth. To test the program contingency hypothesis attitudes are compared within the university group on the basis of program of study. Unlike much of the existing research, the model utilizes both a panel data set (spanning 7 years) and multiple measures of attitudes that, together, permit a more comprehensive test of each theory than has been done to date. By using panel data, this study more firmly establishes the causal effects of education on values since we can examine the possibility of self-selection into university as well as into specific programs. Further, the model employs a broad spectrum of value domains including racial, gender, class and economic attitudes as well as measures of the underlying basis upon which many of these value judgements are constructed (e.g., structural versus individual explanations for inequality).

MACRO-ISSUES AND POLICY CONCERNS

In addition to examining the socializing effects of the university on students by analyzing individual-level data, this research also introduces a macro-perspective by focusing on larger institutional and ideological forces of change within the university system. By highlighting the socialization of attitudes, a critical feature of postsecondary education that is often overlooked in favour of other practical aspects (such as skill development and job acquisition), this research has important implications for current public policy debates over the functions of postsecondary education. Since the first days of the Canadian university in the early 1800s, this institution of higher learning has taken on a number of different roles depending on its current level of autonomy and the perceived needs of the country. Unlike any other period, however, the university is presently under acute pressure by industry, policy makers and the public to become more directly accountable to the demands of the economy. Like most institutions in today's market-oriented society, the university is being looked to as a solution to economic problems in the face of increasing global competition. Although universities are resisting these pressures to varying degrees (since they represent a loss of autonomy), new links are being forged with business, and programs and curriculum are being modified in an attempt to produce graduates who possess more marketable skills[2].

As noted by several authors, we are witnessing a period of change in the university system where there is very little discussion of the possible consequences of this new mandate, outside of its economic implications (Newson and Buchbinder, 1988; Brown, 1994; Pratte, 1994). Thus, an examination of the social effects of attending university would contribute an

important, but currently missing, element to debates on the role of the university in Canadian society.

Before fleshing out the theoretical literature, the following section contextualizes the central focus of the thesis by locating the university within larger processes of historical and sociopolitical change. Of central concern is the extent to which the interests of various external bodies (e.g., government, business and the church) have influenced the university. This discussion will be followed by a critical analysis of the sociopolitical context within which the university currently operates and will lead to the conclusion that the narrowing scope of the university's mandate diminishes the opportunity for students to reap the benefits of a broad and well-rounded education. With this in mind, it is suggested that the possibility of positive attitude and value change for students is similarly limited.

There are three reasons for including this contextual material. First, the social role of the university cannot be fully understood without having some idea of where this institution has been and where it might be headed (Altback, Berdahl and Gumport, 1994). Second, by situating this research historically and politically, the policy implications of the findings will be more apparent. Finally, the following discussion illustrates that insofar as external interests are woven into the fabric of the university, these interests will likely be reflected in the content and patterns of value change experienced by students.

ENDNOTES:

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1. Attitudes are viewed as component parts of values. Thus, the measurement of similar kinds of attitudes can reflect an underlying value (Rokeach, 1973). These concepts are more thoroughly defined in Chapter 4 (Methods).

2. Clearly, this mandate has consequences for other aspects of the university, most notably research. This dissertation is limited to examining the effects of the university on students, leaving such issues for other scholars to address (e.g., Abu-Laban, 1991).

CHAPTER 2

SETTING THE CONTEXT

INTRODUCTION

From the opening of the first university in Canada in 1843 (University of King's College--now the University of Toronto), this institution of higher learning has undergone several transformations according to the convictions of the dominant economic, political and social elite of the time. Although it is commonly held that the university has enjoyed a relatively autonomous position in the past, and that this independence is currently being undermined by an unusually high level of external influence, a review of some key periods in Canada's university history reveals that it has often been used as an instrument of social, political and economic ends by the church, government and business. Since the great expansion of Canada's university system in the 1960s and the more recent economic restrictions, however, the ramifications of this involvement are now of much greater consequence.

AN HISTORICAL VIEW OF THE CANADIAN UNIVERSITY

Canada's early universities bore the imprint of the Anglican church and the principles of traditional British schools. John Graves Simcoe, Upper Canada's first lieutenant-governor, was intent on developing a higher educational system that served to "inculcate British principles, habits and manners into the rising generation" (McKillop, 1994: 6). Simcoe, representing the dominant but waning sentiment of the time, was convinced that the transference of the Anglican customs and traditions of the British university to King's College was necessary to reinforce social order and ensure that the colony flourished.

Although church officials ran the university and were responsible for its daily workings, the mandate of the university was largely imposed by external politicians. Soon after, however, the passing of the University bill in 1849 by the government severed ties to the church and gave full authority over the university to the secular state (McKillop, 1994). This period marks the height of state control over the university[1]. Thus, the early history of the Canadian university represented a period of high external involvement in its operations.

A second period of notable involvement occurred in the early 1900s when the Ontario government further curtailed the association of the university with religious groups by refusing to fund denominational universities. At the same time, the university significantly broadened its curriculum from classical and religious teachings and became a training ground for aspiring professionals such as engineers and lawyers. This change was largely driven by the interests of industry where scientists, engineers and other experts with both theoretical and practical skills were increasingly in demand (Axelrod, 1982).

In the 1940s, the university was again pressured to serve the needs of the nation as a provider of human resources and research for the war effort (Anisef and Axelrod, 1993). As the war progressed, ties between the university and political leaders grew closer resulting in the development of joint initiatives such as compulsory military training on campus for men and, through the Red Cross, training programs for a variety of war-time services performed by women (McKillop, 1994).

Driven by new policy inititiatives and demographic shifts, the university system underwent an unprecedented expansion in the following decades. By the late 1950s and into the 1960s, governments at various levels began to see a greater need to incorporate higher education into a strategy for economic growth.

In the aftermath of the Massey Report in the late 1950s (a report which reflected both social and individual arguments for expanding the country's postsecondary system), the federal government began to inject a major share of resources into the university through direct funding to the provinces (Gregor, 1992). An increase in government-funded grants and scholarships and the introduction of a Canada Student Loans program in 1964 also expanded the pool of eligible Canadian youth who could attend university. These measures opened up opportunities for enrollment by groups that had formerly been excluded from the higher education system (i.e., women[2], visible minorities, the disabled) (Uhl and MacKinnon, 1992). At the same time, a critical mass of young baby boomers was graduating from high school and entering the post-secondary system (Foot, 1996). These events marked the beginning of a period of tremendous university expansion. Between 1978 and 1994, full-time university enrolment rose by almost 60% in Canada (Statistics Canada, 1996) with the highest gains in the social sciences, nearly tripling from 57,500 in 1970 to 162,000 in 1989-90 (Statistics Canada, 1990).

Although the new university policies were presented by conservative government leaders at the time as promoting wider accessibility, Axelrod (1982) has argued that they were principally based on the desire to develop a more highly skilled labour force to meet the needs of corporate Canada. Regardless of the real motive, however, it is clear that the university system was beginning to take on an elevated position of importance not just for government, but also for business.

This shift in the perceived purpose of the university was met with some resistance from the academic community. During a 1961 symposium on Canadian Universities Today, for example, many scholars expressed their

concerns over the university's future. The responsibility of the university is primarily to itself and not to government nor business, it was argued, and its purpose is to educate not job preparation (Stanley and Sylvestre, 1961). Thus, as early as the 1960s, the university community was critical of the movement of universities from centres of higher learning to vocational/trade facilities.

But this resistance was over-shadowed by the growing belief that higher education leads to improved opportunities in the labour market. Higher education was promoted by business and political elites as an avenue to both individual and national prosperity. A higher education, it was argued, not only improves one's chances individually, but collectively furnishes a productive, highly skilled and entrepreneurial populous that will generate economic spin-offs for the entire nation (Axelrod, 1982). For liberals, a university degree was also seen as the answer to social and economic inequality. In particular, feminists of the time placed a great deal of faith in the ability of the educational system to reduce the economic inequality experienced by women, believing that their overall subordinate status was rooted in a lower economic position relative to men[3]. Thus, despite the fact that the 1960s are usually depicted as an era of student revolt and general turbulence, in important ways this was an unusual period of consensus between liberals and conservatives. Although there were pockets of resistance within the university, the match between the needs of several diverse groups were being met with a government-initiated expansion of the post-secondary system.

By the mid 1970s, the recession led to a questioning of postsecondary spending and the quality of teaching. Educational reform, it was argued, had failed to save the economy (Axelrod, 1982). The university community also began to document problems resulting from over-specialization (Bercuson,

Bothwell and Granatstein, 1984), and later on, survey research illustrated the difficulties of underemployment experienced by graduates (Krahn and Lowe, 1991; Redpath, 1994). The hopes of liberals for a redistribution of wealth and greater equality through increased university access were also dampened.

While enrolments continued to increase, funding did not keep up resulting in budget deficits for the first time in years. The assurance of federal funding (which was implemented as an annual commitment in 1951) was waning. By the end of the 1980s, all provinces underwent a severe reduction in per capita spending on higher education (Newson and Buchbinder, 1988). Under tightened economic conditions, Canadian universities are now faced with making curriculum choices based on financial sustainability.

As the above discussion suggests, there have been several periods, in addition to the present, where government control over the university has been extensive. There has also been a fairly consistent theme of industry needs guiding this involvement, although to varying degrees. In contrast to our current situation, however, prior periods of intervention were of much less significance since the university system was relatively undeveloped and was attended by only a few privileged citizens. In fact, as Porter has argued, prior to the 1960s the university system was of very little consequence for Canadian society (Porter, 1979). Today, Canada's university system constitutes a huge 'industry' involving thousands of Canadians as either students or employees of the system. The scale of the university has increased dramatically both in terms of the devotion of fiscal resources and the numbers of people comprising the university community. Canada commits more to post-secondary education than any other OECD country (2.6% of GNP) (CAUT, 1995). In 1992, the community was comprised of 900,000 students, 61,845 faculty members and 25,000 sessional appointments

(Statistics Canada, 1995). This institution also generates a multitude of direct and indirect spin-offs into the larger community from its research and knowledge production and, as this proposed work will investigate, perhaps from the changing values of students themselves. Thus, while this discussion has focused on how the external environment can affect the university, it is clear that the university also affects the larger community in important and sustainable ways. In fact, the interactive nature of the university makes it an important institution in that it both reflects the interests of larger society and influences those interests. Because of this broad range of activities and effects on society, clearly, state intervention into the university system is of much greater consequence not only for the larger society, but also in terms of how changes internal to the university affect the attitude and value changes of students.

THE CURRENT POLITICAL CONTEXT

Arguing that the 'welfare state' that was developed in the past few decades is inadequate in dealing with mounting fiscal and social problems, conservative movements of various forms have emerged in advanced industrial societies since the 1980s. In Canada, this initially took the form of a neo-liberal mandate where free enterprise is of paramount importance. At a provincial level, and particularly under Alberta's Klein regime beginning in 1993, laissez-faire economic policies have been adopted resulting in, among other things, cutbacks and restructuring in education (see Harrison and Laxer, 1995).

Universities are increasingly being subjected to the ideology of a neo-liberal or new right political order. Under this regime, the education system is criticized for promoting a disrespect of business and for over-emphasizing the democratic principles of equality (Elliott and MacLennan, 1994). Others have

reproached the university for not keeping up with the demand for marketable skills as technology further permeates the workplace. The university has been accused of failing to fulfil the expectations placed upon the system in the prosperous 1960s and of undermining the ideological bases of a capitalist economy. Canada's weakened global competitiveness, it is argued, is due to an over-sized social support system and an under-developed entrepreneurial spirit. The result, it is charged, is that there is a growing disparity between what people must know to function effectively in their jobs and what they actually know (Kadish, 1991; Economic Council of Canada, 1992).

As government cutbacks spawned a debate over the usefulness of the university, the political rhetoric that places the university at the centre of economic recovery appears to be compelling. Several authors argue that we are presently witnessing a period of increased demand for the more efficient use of resources within the university as government looks towards the university as an answer to economic problems and labour market instability (Skolnik, 1983; Cameron, 1994; Elliott and McLennan, 1994) and as public demand for increased accountability intensifies (Hanson and Stampen, 1994). The university is viewed not only as part of the problem, but is also being turned to as a partial solution. To this end, both conservative and liberal governments (and business leaders) are attempting to harness education more closely to the goal of greater international competitiveness. If we have a highly skilled labour force, it is argued, we will be able to compete in the highly competitive global economy (Canadian Labour Market and Productivity Centre, 1990). These interests and pressures mean that 'business as usual' within the university is no longer acceptable to industry and government.

There are two problematic assumptions in this neo-liberal ideology. First,

the view that the university has not filled the demands of the economy by producing a highly skilled and motivated labour force is questionable. This assumption has been widely criticized by the social science community since it faultily assumes that most jobs are becoming more highly skilled. Rather, as several studies have shown, there is a growing disparity between the skill requirements of 'good' jobs and 'bad' jobs with the majority of new jobs created over the last 15 years falling in the low wage and part-time sectors of the service industry (Myles, Picot and Wannell, 1988; Krahn, 1992). Accordingly, attempts to supply a more highly skilled labour force are at best premature, since there is less evidence of a demand-side increase in skilled jobs. Moreover, as the labour market becomes increasingly unstable, secure work is simply harder to find[4].

Second, the view that the forces of global markets take on an importance that override the consideration of all other elements of society is problematic. This assumes that as long as the economy is healthy, the rest of society can take care of itself[5]. Yet, with more university resources being allocated to forging links with business and with an increasing interest in re-packaging the image of the university as an important source of skilled labour and applicable research, other functions of the university are being overlooked. The new narrowly-conceived economic mandate relegates social issues even further to the sidelines.

There are several indications that the market-based ideology of the right is permeating the university as budgets are cut and mandates changed. In some cases, there has been a re-establishment of restrictions in enrolment signalling a reversal of the 'open-door' policy of the 1960s. This restriction is partly based on the notion that wider access translates into reduced quality of programs (Hanson and Stampen, 1994). There is also evidence that programs are being cut if they

are not directly related to the labour market. For example, an American analysis of program restructuring in the 1980s shows that curricula devoted to women's issues or those with less direct ties to the labour market were disproportionately cut (Zusmau, 1994). And as Newson and Buchbinder (1988) document, the liberal vision of accessibility in the university that accompanied its growth in the 1960s has lost influence.

Under the current new-right provincial government in Alberta, for example, efforts to redirect higher educational programs towards the marketplace have been explicit[6]. The recent White Paper developed by Alberta Advanced Education and Career Development states that "government will take an active leadership role in setting policy and direction for the system of adult learning in Alberta" (Alberta Advanced Education and Career Development, 1994: 6)[7]. The White Paper also openly declares that universities need to become increasingly accountable through ties with business. The provincial government has since gone on to develop an Access Fund which specifically stipulates that funds will only be allocated to programs that meet the needs of the labour market. Interestingly, none of the documents nor programs mention anything about the social role of the university[8].

In 1994, the Ontario Council of University Affairs produced a document calling for increased accountability and responsiveness by universities. One solution proposed to sever the university from public support forcing it to respond to the exigencies of the free market with fiscal discipline and commercial efficiency. Critics, however, point out that by making the survival of university rest upon its responsiveness to the needs of the marketplace, the result will be a reduction in research and a transformation of universities into colleges with a focus on 'McStudent' outputs (Emberly, 1996). More importantly, again we see

widespread attention being paid to the economic side of higher education with no concern for its social responsibilities.

Indeed, aside from the pockets of work by educational sociologists and philosophers, there are very few discussions about the kind of society the university education system should be dedicated to creating. Tomlinson (1992) notes, for example, that the development of a moral and just community beyond the obligations to consumers has largely been absent from recent educational debates. British sociologist, Philip Brown (1987), is highly critical of the 'new vocationalism' where the preparation of youth for a place in the occupational structure becomes the sole purpose of higher education.

My criticism of the current restructuring of the university does not reject the goal of producing graduates with more marketable skills. Rather, I argue that social and humanitarian aspects of the university are increasingly undermined as the economic logic of the right gains momentum.

Countervailing forces of the 'Left'

At the same time that the neo-liberal agenda is gaining a firm foothold within the university, there are undoubtedly other currents of change that may also have an effect on the kinds of values that are being transmitted to students. Perhaps most powerful of these are the forces of the 'cultural left'. Beginning with debates over class-related issues in the 60s, this movement has taken on momentum with the addition of such concerns as sexism, racism and homophobia. The struggles fought by the cultural left are not only reflected in their research about inequities in the larger society, but also in making change in their own environment both inside and outside the classroom. For example, Peter Emberly (1996) maintains that changes have been made to update

curriculum to expose the historically privileged position given to European society (eurocentrism), men (androcentrism) and heterosexuals (heterocentrism). In trying to make the learning environment more inclusive and accepting of otherwise marginalized groups, new policies have been introduced to change the structural composition of the university's personnel (e.g., employment equity programs) and resources provided for victims of discrimination (e.g., sexual abuse centres).

The countervailing effects of this movement on the business model of universities cannot be dismissed. The university is not just an institution that reflects the exigencies of larger economic conditions, but also contains the seeds of its own structure, development and growth. The university has undergone changes as a result of both external pressures to become more fiscally responsible and accountable as well as progressive influences from within the walls of academe. On the other hand, the extent to which the cultural left has been able to resist the forces of the corporate right is debatable. Budgets are still cut, departments downsized and funding more strictly dispersed. Thus, the effects of the cultural left would be more realistically depicted as competing with the corporate right in the sense that it offers a view of the world that is not confined to economic necessity.

In the final analysis, we are still left with determining the effects of the new business mandate on the purpose of the university. How do these changes affect the quality of education and the university as an institution of higher learning? What areas of the university will be neglected with this new model? And, most directly related to this research, how does this model for higher education affect the possible transmission of broad social values to students?

A LIBERAL ARTS VISION OF THE UNIVERSITY

Although the university has historically been viewed as a socializing agent, it was not until the expansionary years in the 1960s that the value of a liberal education was fully endorsed. The worth of a liberal arts vision, however, is being over-shadowed with the current support for the restructuring of the university so it will meet the needs of business. Yet, among those who consider the non-economic aspects of the role of the university as vital, this vision is still a worthy goal.

In contrast to the neo-conservative model of the ideal university, educational philosophers tend to agree that the role of the university should be to help cultivate the talents and sensitivities of students at a more holistic level. Educational philosophers present alternatives that incorporate notions of citizenry, morality and ethics through liberal arts programs that foster an understanding of a variety of perspectives. Kadish (1991), for example, speculates that if the university bases all of its curriculum on the eventual jobs of students, then the opportunity to forge a conscience is lost. If the university is presented primarily as a way of escaping low-paid and ill-esteemed social positions, then it serves merely as a training-ground for future elites. Rather, Kadish argues, higher education supplies an opportunity for the reevaluation of people's attitudes and judgements. If students are exposed to a wide variety of historical ideas and social values, and if they are provided with the tools to think analytically and critically, they will be in a better position to make value judgements fairly and equitably[9].

Political scientist Charles W. Anderson (1993) is highly critical of American universities' remarkable silence over their educational aims, pointing out that there is no over-arching philosophy to guide the content and process of

teaching. He argues that

> When we think about the aims of education, we are asking how we want to go about nurturing and enhancing the powers of the mind, what knowledge, beliefs and values we want cultivated (p42).

To this end, Anderson suggests that the aims of higher education should be to develop a more thorough understanding of different perspectives which will lead to the development of tolerance and understanding of diversity.

Canadian political scientist, Peter Emberly (1996), makes a harsh but eloquent plea for a dedicated return to the university's highest purpose of cultivating intellectual and spiritual passion and moral judgement. As he states:

> In its capacity to question prevailing social practices and to stimulate intellectual knowing and moral doing that transcend the immediate practices of the world, the university serves society by offering it a higher idea of itself and endowing it with decency and grace (Emberly, 1996: 14),

The case for a liberal education has even been expressed in the business management literature. Pitcher (1995), who examines the characteristics of business visionaries, is adamant that vision cannot be taught but comes to a mind that has been exposed to a variety of perspectives. Therefore, a general education is more important than one that teaches specific formulas for success. She asks "what good to society is a marketing expert who knows nothing about ethics, or an economist who knows nothing about profound human motivation and needs?" (Pitcher, 1995: 176).

These scholars point out the importance of an education system that goes beyond the bounds of economic necessity and attends to a larger vision of university scholarship. While the authors vary in their reasons for why the

development of a liberal education system is important, they all advocate a curriculum that broadens the exposure of students to a variety of perspectives. Exit surveys of university graduates suggest that most students themselves are in favour of a general education[10] (University of Alberta Graduand Survey, 1994). Public opinion surveys also show that the majority of the general population exhibits a preference for a broad-based education, or at the very least, a balance between a vocational and general education (Krahn and Sorensen, 1995). This clearly contrasts to a vocational mandate where a broad base of knowledge and understanding is inhibited by the fixation on instrumental skill development.

SUMMARY

While it is clear that the Canadian university has always been implicated in the economy, this connection has never been as powerful as it is now. Additionally, since there appears to be an absence of discussion over the social implications of this viewpoint, there is little reason to believe that this pressure on the university will change at any time in the near future. Yet, it is important to consider the effects of this mandate on the kinds of attitudes and values that students might adopt. If the educational philosophers are correct in their analysis of the worth of a liberal education, then it is possible that important benefits to society as a whole will be lost if restructuring continues in the same direction.

The question still remains, however, as to whether the university has an effect on the way students come to view the world. Does the present structure of the university foster value change in students? If so, what is the nature and depth of these changes? Are the values that are represented by the university primarily internally derived from such influences as the cultural left or do they

reflect the needs of elite institutions such as business and government, or both? Are these values transferred to students? Or, is it necessary to qualify the question such that different programs of concentration differentially affect students' values? To this end, sociologists have been engaged in a debate concerning the actual role that higher education plays in the larger social world and how this function affects the socialization of students. Thus, in addition to examining the general role of the university from an historical, political-economy and prescriptive stance, the following theoretical discussion narrows this research down to the heart of the thesis.

ENDNOTES

1. For example, the state would appoint individuals to the University Senate and have final authority over the appointment of all professors.

2. Full-time female enrolment increased by almost 80 percent between 1975 and 1990, while the number of men grew by 20 percent (Uhl and MacKinnon, 1992).

3. At this time, women's subordination was frequently viewed as a mere by-product of capitalism where their entrance into the public world of work was a solution to the struggles of women (i.e. C. Guettal, 1974). More recent feminist scholars have begun to explore the many ways patriarchy and capitalism interact. The fact that women have retained their secondary status despite their high labour force participation rates has led feminist sociologists to focus on the importance of patriarchy and to specify how it interacts with the mechanisms of capitalism. This movement began in the literature with the domestic labour debate in the 1970s which highlighted the concept that domestic labour is not separate from industrial production, but maintains an intimate position through its production and reproduction of labour power (e.g., Seccombe, 1974; 1976; 1980; Coulson, Magas and Wainwright, 1975; Gardiner, 1975; Fox, 1980).

4. Although Britain's industry base is different than Canada's, they have experienced similar shifts in political and economic attitudes that are reflected in a current critique of the education system. Yet, Philip Brown's (1987) analysis of changes in the British school system illustrates that the perceived crisis in education is not due to the inability of the system to meet the demands of industry, but is because the 'respectable' working class is no longer able to obtain jobs in manufacturing industries.

5. Several authors have been critical of the renewed emphasis on the economy since it ignores other vital aspects of society. These authors have pointed out that such economy-based policies as free trade agreements will lead to job loss, wage cuts, increased foreign ownership and factory relocations and ultimately serve to reduce the quality of life of Canadians in general (Canadian Labour Congress, 1991; Carr, 1993) and for women particularly (Cohen, 1987).

6. It should be noted that the cutbacks in funding for higher education by the Klein government were aimed at reducing government deficits and reversing the increasingly high level of spending on post-secondary education that began in the 1970s (e.g. see Bothwell and Granastein,

1984). Thus, the restructuring of the higher education system in Alberta has an economic impetus as well as an ideological one.

7. Parenthetically, this is an interesting statement given that it represents increased government involvement at the same time that the current provincial government is advocating laissez faire politics.

8. Likely to the dismay of many academics, very little is mentioned about research as well.

9. Kadish (1991) further argues that ethics should not be directly taught as this is indoctrination. Rather, a liberal education should only influence ethics through the critical encounter of a wide range of perspectives.

10. Results of surveys of graduates from the University of Alberta over four consecutive years consistently found that over 65% of respondents felt that a general education and a job-specific education are equally important, suggesting that students have multiple expectations of the university (University of Alberta, 1995).

CHAPTER 3

THEORETICAL PERSPECTIVES, EMPIRICAL RESEARCH AND METHODOLOGICAL ISSUES

INTRODUCTION

The impact of education on values has been depicted in the research literature as either profound, superficial, or both. Enlightenment theorists argue that higher education generates new ideas and attitudes that challenge the system and ultimately lead to greater equality (Selznick and Steinburg, 1969; Hyman and Wright, 1979; Lipset, 1979; Weil, 1985; Economic Council of Canada, 1991). In contrast, reproduction theorists maintain that the effect of education on values is superficial and reproduces support for existing inequalities (Bowles and Gintis, 1976; Curtis and Lambert, 1976; Gergen and Gergen, 1981; Baer and Lambert, 1982 and 1990; Jackman and Muha, 1984; Kane, 1995).

Each of these two opposing perspectives on education can be located within a classical sociological paradigm. Enlightenment theory can be identified as functionalist while the reproduction model is strongly linked to Marxist theory. This is not surprising considering that the sociology of education in general has closely mirrored the predominant patterns of debate within the discipline of sociology. Following the trend in sociology where functionalism cornered the research agenda in the middle of the century, sociologists of education at the time embraced the functionalist concepts of ability and merit in their educational schemes. The major function of education, it was argued, is to meet society's needs for skilled labour. This is achieved by making the school system an open institution of competition that fosters the talents of as many people as possible. Since ability and merit (rather than heritage) are the basic determinants of one's

position in society, inequalities based on ascription are no longer tenable. Moreover, the skills and knowledge acquired in the educational system are said to match the skill demand by industry and thus result in increased productivity and economic growth.

The functionalist (and human capital) idea that increased education leads to greater personal and national economic prosperity was ardently received by North American policy makers of the time (Webster, 1984; Anisef and Axelrod, 1993), as evidenced by the massive educational expansion between 1950 and 1980. As the popularity of functionalism waned in academia, however, the Marxist emphasis on conflict, inequality and class took on an increasing prominence in sociology. Similarly, academics in the sociology of education began to question the basic assumption of functionalism that education leads to social harmony and increased equality. Rather than meeting the demands of industry, critical theorists claimed that education meets the ideological requirements of capital and reproduces existing class divisions. Thus, as academic Marxism re-emerged in the late 1960s, sociologists of education began to examine the ways in which the structural and ideological features of society are reproduced in education (Davies, 1995).

I will first trace the relationship between the two main theories of higher education with these traditional sociological themes. Linkages between post-industrial theory and the strongest version of enlightenment theory will also be examined. The connection between functionalism and enlightenment theory, while obvious in many respects, is not directly made by advocates of enlightenment theory. This contrasts to the explicit Marxist assumptions that form the basic arguments of reproduction theory. Consequently, part of the purpose of the following section on enlightenment theory will be to reveal its

relationship to functionalism. Second, existing empirical evidence for the theories will be presented and evaluated, and conclusions will be drawn about what is needed to advance the research on the relationship between education and attitudes.

ENLIGHTENMENT THEORY

Functionalist Origins

Until fairly recently, the sociology of education in North America has been dominated by a functionalist perspective of society (Murphy, 1979; Webster, 1984; Milan, 1991)[1]. In line with this tradition, enlightenment theory holds several basic assumptions that can be traced to functionalism. Although there is not a one-to-one correlation between the tenets of functionalism and enlightenment theory, they share several important assumptions on the role of education. An examination of the functionalist 'modernization' theorists of the 1950s and 1960s[2] reveals that enlightenment theory draws upon the constructs of value determinism, rationality, and social harmony--concepts that formed the cornerstone of modernization theory.

Following Durkheim's evolutionary scheme, functionalist modernization theorists sought to explain social change by examining the shifts from a traditional to a modern industrialized society. Under this framework, emphasis was placed on the role of values in determining the kind of society people create (Webster, 1984). To the extent that enlightenment theorists maintain that value shifts among students leads to tangible change in the structures of inequality, both perspectives emphasize the ability of values to influence social change.

Second, modernization theorists maintain that while an emotional and superstitious approach to the world distinguishes a traditional society, rational

and scientific reasoning form the basis of values in modern society. Thus, in the modern industrial world irrational and ascription-based determinants of inequality have been replaced with rational and free achievement-based avenues to equality. Further, education becomes a key institution for the implementation and reinforcement of this system of meritocracy (Parsons, 1951; 1959). Along a similar vein, enlightenment theory holds that institutions of higher learning reduce inequality by changing the way students evaluate other members of society. Specifically, as students are exposed to a greater variety of rational knowledge it becomes increasingly difficult for them to uphold the ascriptive and irrational bases of intolerance.

Finally, and again borrowing heavily from Durkheim who argued that education was a central site for (moral) integration, the modernization school argues that a key function of education is to socialize new members of society into prevailing political and cultural value systems. As members of modern society become increasingly divided into subgroups, educational institutions function as a necessary unifier of otherwise isolated groups. The functional role of education is to smoothly incorporate youth into industrialized society's dominant values of self-discipline, hard work and achievement[3]. These values work in congruence with the needs of industry by producing a new generation of productive high-achievers (Mayhew, 1982). Enlightenment theorists also propose that education (and specifically higher education) spawns an adoption of values that leads to greater social harmony, but by fostering greater tolerance towards different society groups rather than through the encouragement of modern values of achievement and self-discipline. Thus, both functionalist perspectives view education as a site for value development and social unification, however, the exact nature of these values differs.

Since the 1960s, functionalism and its modernization descendent have been subjected to heavy criticism in academia. This has particularly been the case for the functionalist argument that there has been a decline in ascriptive bases of occupational attainment and inequality. Numerous studies carried out over the latter part of the 20th century reveal that the relationship between education and occupation is still strongly grounded in class origins (e.g., father's level of education remains one of the best predictors of current education), ethnicity and gender (Krahn and Lowe, 1993). Secondly, and as we will see in the discussion on the reproduction model of education below, the assumption that dominant values equally and fairly serve the needs of all society, is questionable. Before discussing the specific ways that enlightenment theorists propose that education leads to greater tolerance, parallels between post-industrial and enlightenment theory will be examined.

Post-Industrial and Enlightenment Theory

The work of post-industrialist theorists also relates to enlightenment theory, although from a more class-based position rather than the utilitarian perspective of modernization theorists. The predictions of post-industrial theorists inform the strongest version of enlightenment theory: students emerge from university as agents of social change who attempt to subvert the status quo. The weaker version states that university merely encourages tolerance towards outgroups. Thus, the weaker functionalist rendition views education as a normative regulator of social harmony, while the strongest interpretation sees it as a champion of radical social change.

Several post-industrial theorists predicted that, as services replaced goods as the primary products of industry, knowledge would replace ownership as the

basis for power and wealth distribution (e.g., Bell, 1964, 1967, 1973; Galbraith, 1967; Touraine, 1971). Most notable among these theorists is Daniel Bell who argued that as owners become more dependent on the knowledge and specialized skills of professionals and technicians, this group of workers would replace the ruling property class and form a new class of power brokers. The New Class, according to Bell, will be comprised of four sub-groups (the scientific, technological, administrative and cultural), all with an intrinsic interest in learning. Bell further maintains that the university, rather than business, would become the central institution of mobility:

> [I]f the business firm was the key institution of the past one hundred years, because of its role in organizing production for the mass creation of products, the university will become the central institution of the next one hundred years because of its role as the new source of innovation and knowledge (Bell, 1967: 30).

Alvin Gouldner (1967) took the idea of knowledge workers as power brokers to even greater lengths by proposing that education creates a new class of liberal and critical intellectuals who try to subvert the status quo. Gouldner (1979) highlighted the importance of the way the New Class wields knowledge, rather than the content of their knowledge. For Gouldner, the power and importance of the New Class comes directly from what he calls a 'culture of critical discourse' (e.g., discussing, examining and challenging existing systems)[4]. Thus, the university would be a spawning ground for change as it fosters

> a culture of critical discourse by which authority is unwittingly undermined, deviance fostered, the status quo challenged and dissent systematically produced (Gouldner, 1979: 45).

To support his view that higher education gives rise to agents of change, Gouldner cites a considerable amount of international evidence showing that rebels tend to be highly educated. For example, Bolshevik leaders in the Russian Revolution primarily consisted of intellectuals. Interestingly, Gouldner also claims that rebellion is greatest among students in the humanities, liberal arts and theoretical sciences.

These optimistic visions posed by post-industrial theorists, especially for the prediction that inequality would be reduced, have not been received without criticism. Robert Reich (1991), for example, while recognizing the prominence of what he calls 'symbolic analysts' (e.g., engineers, scientists, bankers, developers) in a global and service-oriented economy, also acknowledges that inequality has increased in North America as this class of workers has gained wealth at the same time that most 'routine production' workers have become more disadvantaged. Despite the failed predictions of Bell and others regarding reductions in social inequality, however, the notion that higher education has a liberalizing effect on its participants is still upheld by enlightenment scholars.

Enlightenment Theory: A Range of Approaches

The general proposition of enlightenment theory is that education reduces inequality. There are, however, several accounts of this theory that can be identified. The strongest version of enlightenment theory follows Gouldner's argument that the educated elite comprise a new class of liberal and critical intellectuals who attempt to subvert the status quo. Students emerge from university as society's radicals and as the 'movers and shakers' of social change. Few researchers, however, make this extreme claim. Most proponents of enlightenment theory take the more moderate position that education leads to a

greater commitment to the idea of equality as a positive value, but stop short of making assertions that the educated elite comprise a new class of social radicals who consciously work to undermine dominant ideologies (e.g., Lipset 1979, 1981; Selznick and Steinburg, 1969; Robinson and Bell, 1978; Ladd, 1978; Hyman and Wright, 1979; Quinley and Glock, 1979; Economic Council of Canada, 1991). For example, even though Guimond et al. (1984) maintain that their findings of increased tolerance suggest that participation in the social sciences is a 'radicalizing' experience, they wisely refrain from concluding that attitude change translates into behavioural change[5].

Additionally, the evidence that students are radicalized to the point of progressive action is rather weak and is based primarily on students' proclivity for political and social activity while they are still students (e.g., Lipset, 1976). While there is some evidence that this sort of radical activity may continue past university graduation into adulthood, it is not clear whether this is due to education, social origins, personal characteristics or other subsequent life course events (Alwin, Cohen, Newcomb, 1991). Moreover, it is easy to think of many examples where university graduates became active in politics or industry as strong proponents of conservative ideology. One only has to name Margaret Thatcher, George Bush, Brian Mulroney and Conrad Black to make the point. These are, however, extreme cases and it is more probable that the majority of graduates progress through life more or less passively, much like the rest of the population.[6] Based on these criticisms, it is concluded that it would be prudent to reject this radical version of enlightenment theory and focus on the principles of the following, and more moderate, version.

Review of Enlightenment Empirical Research

In the United States, there is a long tradition of empirical research showing that higher education changes students' attitudes, values and beliefs in a number of positive ways. Bowen's (1977) review of many of these studies reveals that the changes for students range from becoming more secular to less dogmatic to more tolerant. He concludes that "almost every study revealed substantial increases in intellectual tolerance among college students" and that "these findings remained valid when controls for student ability levels and socioeconomic status were introduced" (Bowen, 1977: 78). Hyman and Wright's (1979) review of 38 national sample surveys conducted between 1949 and 1975 leads to their declaration that "education produces lasting good effects in the realm of values" (p.60). Weil (1985) summarizes his assessment of the research on the effects of education as follows:

> The positive relationship between higher levels of educational attainment and social and political liberalism (especially tolerance) has been one of the most stable and consistent findings in empirical social research of contemporary American society (p.458).

Despite the strong claims of these authors, most of the studies reviewed predate the 1980s. Hence, these conclusions may no longer be relevant. There are at least three reasons for questioning the transferability of these seemingly solid findings to the current situation. First, and most broadly speaking, research shows that the beliefs and values that comprise ideology today are quite distinct from those typical of industrial society between the 1930s and 1960s. Several studies have shown that there has been a general increase in tolerance towards minority groups over time by the population at large, controlling on education (Rokeach and Ball-Rokeach, 1989; Sniderman and Piazza, 1993). In addition, there has been an increase in the rejection of traditional gender roles within the

general public (Wilson, 1991). There is also evidence that people's beliefs and values are less clearly delineated between liberal and conservative ideologies than they were in the past (Abercrombie, Hill and Turner, 1980). Second, in recent years we have witnessed a political and social shift to the right signified by an embracement of the ideologies of a free market, individualism, a minimal state and advancement of property rights (neo-liberalism), and traditional social and moral values (social conservatism). This movement has been accompanied by a backlash of unabashed disdain for the 'political correctness' that emerged in the 1960s and 1970s, the argument being that the issues faced by disadvantaged groups have been exaggerated and the policy initiatives designed to reduce inequality have either gone too far or are without a basis in reality. Thus, within a context of widespread neo-conservative values, even the educated may be less tolerant and liberal than they were in past times. Related to this, the university has undergone several organizational transformations such that students attending the university within the last decade may be presented with quite different institutional values and course materials than were students of prior generations (see Chapter 2). Third, the demographic characteristics of the student body have changed dramatically, particularly with the large increase in female students since the 1960s (e.g., females now receive a majority of bachelor degrees; see Guppy and Arai, 1993). The educational effects on the attitudes and values of this more diverse population may be quite different from the effects on the more uniform body of primarily male students in earlier decades.

In addition to these possible changes over time, many critics have argued that the relationship between education and liberal attitudes may be merely an artefact of a different response style of the better educated or of the research

instruments used. Since the highly educated are much more familiar with the process of answering questionnaires, they are better able to hide their prejudice compared to the less-educated (Gergen and Gergen, 1981). Jackman (1973) has also shown that the effect of education on values may be due to the fact that the well-educated are more sensitive to social desirability pressures and tend to respond in specific ways to certain kinds of question and response formats.

Still other critics charge that there has been a tendency among enlightenment theorists to overlook contradictory evidence. In Jackman and Muha's (1984) review of this literature, they point out that when statistical relationships are found that do not support enlightenment theory they are typically ignored or explained away as an exception. In addition, several researchers have found differences in attitudinal changes on the basis of target group and attitudinal domain. For example, Curtis and Lambert (1976) found that the better-educated were more tolerant of Jews and Blacks but less tolerant towards unions and conservatives. Jackman and Muha (1984) find a positive effect on racial attitudes, but a negative effect on class attitudes. Weil (1985) found that the extent to which attitudes become more liberal varies cross-nationally.

Together, these criticisms cast some doubt on the assertions of enlightenment theory of a direct positive relationship between education and enlightenment. The contradictory evidence suggests that it may be a mistake to assume that if attitudes become more liberal on one dimension, this represents a universal liberalizing effect. Rather, most of the research that has found supporting evidence (and particularly the earlier studies) focused on attitudes towards racial minorities (and even more specifically on attitudes towards Blacks and Jews). The possibility that higher education increases tolerance towards

minority groups but does not necessarily affect attitudes regarding other aspects of inequality is important to note since, as we will see in the discussion on reproduction theory below, this is precisely the evidence that reproduction theorists use to support their claim that education has a conservative effect on students.

Although there is a growing recognition among enlightenment theorists of education's variable effects, little effort has been made to theorize these differences (Weil, 1985). At best, attempts have been made to typologize the results by concluding, for example, that education has an effect on social liberalism, but not on economic liberalism (Lipset, 1981). Still, no theoretical explanation is provided for why these effects might differ.

It is also noteworthy that this body of research is plagued with measurement inconsistencies; it is rare to find the same measures of liberalism or even tolerance across studies. Furthermore, many of the research models incorrectly rely on cross-sectional data to demonstrate a cause-and-effect process. These are significant problems that will be discussed in more detail in a subsequent section of this chapter.

In summary, enlightenment theory predicts that higher education promotes harmony within an otherwise disjointed society by fostering intergroup tolerance. This is likely an emotionally compelling theory for academics who presumably gain some satisfaction from the idea that their own liberalism is transferred to students. As attractive as this theory sounds, however, the variable and somewhat dated empirical evidence provides sufficient reason to doubt the claim that education generates a universal liberal effect on values. Yet, within the enlightenment literature there have been no systematic attempts

to account for this variation. In summarizing the present state of enlightenment research Weil (1985) remarks that,

> the accumulation of methodologically straightforward findings seems sufficient for us to reject the conclusion that education has a universally liberalizing effect on values. On the other hand, its effect is sufficiently widespread for us to consider it a norm under certain circumstances. This conclusion implies two things: first, that we must reconsider the old debate concerning the proper interpretation of the education-liberalism correlation when it does appear; and second, that it is now incumbent upon us to begin to investigate systematically the conditions under which the correlation emerges (459).

Although, as we will see, reproduction theorists have made more meaningful attempts to explain these confounding findings, this opposing body of work is also afflicted with empirical difficulties. Before these are discussed, however, the origins and predictions of reproduction theory will be outlined.

REPRODUCTION OF INEQUALITY THEORY

Marxist Origins

As Marxism enjoyed increased popularity in the mid 1960s, critical theorists of education began to counter the functionalist claim of a direct relationship between education and occupation. Their ideas built on Marx' notion that the material basis of every society is the basis for all other social relations. In contrast to the central position of values in the functionalist explanation of society, Marx maintained that the social relations of production formed by the economic structure of society serve as a foundation for the legal, political and value superstructure. Within capitalist society, the most important features of society emerge from the social relations between the bourgeoisie and the proletariat (Hunter, 1981).

On this basis, critical theorists maintain that the educational system reflects the interests of the dominant class and ultimately serves the needs of

capital, thereby reproducing inequality. This view was initially used to explain the contributions that public education makes to class divisions. Collins (1971), for example, contends that the main task of the public school is to transmit respect for middle-class culture and that employers use education as a screening device which assures them of a well-socialized employee. Similarly, Bowles and Gintis (1976) argue that the principal factor behind rising levels of educational attainment is the increasing requirement by capitalists for a reliable and compliant working class that will accept the hierarchical structure of authority in the workplace. The educational system works towards the integration of the social relations of production (i.e., class divisions) and the economic system by tailoring the aspirations and identities of the working class to the requirements of the social division of labour. In doing so, education legitimizes inequality by reducing discontent over the hierarchical division of labour and the processes of placement within the system. The ideology of universalism (open competition) that functionalists argue forms the basis of equality, actually legitimizes the outcome of competition and ensures that the members of the lower classes accept their fate. Thus, in contrast to the functionalist view that education provides knowledge and skills training, critical theorists posit that it transmits knowledge and respect for middle and upper class culture[7].

With regard to higher levels of education, critical theorists assume that if public education is structured according to the needs of capital, there is reason to believe that universities are also tied to the requirements of the economic and social elite. Most of the work in this area has focused on the credentialist role of higher education where the acquisition of a university degree perpetuates the replication of a relatively-closed privileged class. It has also been argued that higher education provides the dominant class with the cultural knowledge

deemed necessary for their training for elite occupations. Neo-Weberians such as Collins (1971) and Porter (1965), for example, adopt the view that the primary task of the university is to reproduce a class of cultural elites. Porter (1965) has further argued that intellectuals have a commitment to existing structures of inequality (the status quo)[8]. By focusing on the reproduction of an elite class, this perspective represents the corollary to those theories discussed above that examine the reproduction of the lower classes. In other words, these two theories present two sides of the same reproduction coin.

Reproduction Theories of Higher Education: Promotion of Individualism

Reproduction theory rests on the *dominant ideology thesis* developed by such Marxists as Habermas, Marcuse and Poulantzas which states that there is a powerful, effective dominant ideology in contemporary capitalist societies that works to create an acceptance of capitalism in the working class (Abercrombie, Hill and Turner, 1980). Baer et al. define the dominant ideology as;

> belief systems, promulgated by and for the dominant classes, which make palatable to them and in varying degrees to subordinate classes, the large inequalities in the social distribution of power and wealth (Baer and Lambert, 1982: 174).

Reproduction theorists of higher education argue that post-secondary institutions serve to refine attitudes to fit the dominant ideology. Here it is maintained that the university offers a more sophisticated way than public school of allowing students to maintain their privileged status without impinging on their newly acquired sensibilities towards less advantaged groups. Although surveys show that the educated express more liberal views towards minority groups, they do not become more approving of collective responses to inequalities (e.g., unions) since these responses represent a violation of the more dominant value

of individualism perpetuated within the university. To the extent that a university education leads to individual growth and occupational achievement, it is argued, students increasingly internalize and identify with the ideology of individual ability being the primary determinant of success. The strong link between universities and individualism (i.e., success through individual achievement) means that social or structural explanations for inequality will be largely dismissed by students. Students may come to oppose racism and sexism in principle (or at the very least are better able to recognize racism and sexism; see Jackman, 1978; Jackman and Senter, 1980; Gergen and Gergen, 1981), but their belief in the merits of the individual override their identification with systemic or structural explanations of inequality. Basically, a university education enhances students' faith in a system of meritocracy.

Consequently, it is argued, the change in attitudes that students express is merely superficial and has no meaningful or real effect on inequality. On its own, these reproduction theorists argue that the university is incapable of fundamental change since there is no motivation for powerful groups to relinquish their vested interests (Jackman and Muha, 1984; Kane, 1985). Education does not change the most important aspects of intergroup relations and may actually legitimate inequality[9].

Review of Reproduction Empirical Research

While various writers have put forward the general proposition of reproduction theory that the education system is inextricably linked to the technical and social needs of capital, attempts to directly apply this theory to higher levels of education are somewhat scarce (e.g., Baer and Lambert, 1982; Jackman and Muha, 1984; Davis and Robinson, 1991; Kane, 1995). For

example, in support of reproduction theory, Kane found that students become more aware of gender inequalities as they progress through the higher education system, but that they are no more committed to the elimination of these qualities than the less educated. It is not surprising, however, that research from a reproduction perspective is scarce since it is only recently that attention has shifted from the idea that the reproduction of inequality occurs in the public education system towards establishing a similar relationship for post-secondary education. On this basis, it would be hasty to conclude that these few studies present sufficient evidence to support the reproduction theory, at least at the post-secondary level.

Yet other indirectly-related research on class consciousness, attitudes, values and ideology present evidence that bears on the claims of reproduction theory. First, the research on class consciousness, where education is often included as one of several measures of one's class position, fairly consistently finds a positive relationship between education and conservative attitudes (e.g., reduced support for trade unions, government intervention in the economy, social welfare measures and reductions in social inequality). In a review of the research on differences in class attitudes, Mann (1970) concluded that individuals with lower levels of education (and occupation and income) were more likely to support liberal political and social initiatives. More recently, Johnston and Ornstein's (1985) analysis of social class and political ideology in Canada led them to conclude that "additional schooling leads people to the right" (p385).

Another body of work, however, provides evidence leading us to question the individualist contentions of the American reproduction theorists. Social psychological research on attitude change has consistently found an increasing

tolerance towards racial minority groups over the years, but if we look at attitudes towards policies and programs designed to bring about racial integration, these results are much more mixed (Sniderman and Piazza, 1993). Rokeach and Ball-Rokeach (1989) have found that over the last several decades people have become less concerned with issues of equality and more concerned with their own personal life, indicating a shift in the general population from collective to individual value orientations. These studies suggests that evidence of higher levels of education being associated with greater individualism may, in part, be a function of an overall value shift in society at large rather than an education effect specifically.

In summary, the research on class consciousness provides indirect support for the general claim of reproduction theorists that higher levels of education lead to increased conservative sociopolitical values. Conversely, the social psychological literature points out that the positive relationship between higher education and individualism may, in fact, be a function of an overall societal shift towards greater individualism. This discussion also highlights the many difficulties that are encountered when attempting to illustrate the empirical existence of such abstract concepts as ideology and its component values. As the following section illustrates, conceptual and measurement problems have plagued many aspects of this research.

A COMPARATIVE REVIEW OF BOTH THEORIES OF EDUCATION[10]

Whereas the focus for enlightenment theorists has tended to be on education's effects on democratic principles and tolerance, the attention of reproduction theorists has been directed towards examining the underlying material bases for inequality (and particularly class inequality). These

differences are reflected in their respective interpretations of survey data and in the way these interpretations are fed back into their theories. Advocates of the enlightenment perspective tend to interpret results showing a positive relationship between education and tolerance, more or less, at face value. Or, as discussed above, if there are measures of enlightenment that do not correspond to the theory, they tend to be dismissed as anomalies and no attempt is made to situate the findings within the theory. Conversely, reproductionist theorists have attempted to explain such findings by adding to the theory. For example, Jackman and Muha (1984) devote several pages to exploring possible alternative reasons for their mixed findings that students become more tolerant to minority groups but less accepting of policy solutions to inequality. In fact, it is this research that suggests the possibility that students have merely become more sophisticated in how they answer questions about their values.

The difference in interpretation of results also implies that there is a difference in the variables required to test each theory. To find support for enlightenment theory, one must find education effects across belief domains related to increased tolerance of diversity and particularly towards minority groups. Similar results would be interpreted by reproduction theorists as an indication of a superficial commitment to the ideals of democracy. For this group, the most important distinguishing test of the conservative effects of education would require that students reject the underlying material basis for inequality. Thus, it might be argued that the requirements of support for reproduction theory are more rigorous than for enlightenment theory.

A detailed comparison of the empirical findings of studies by enlightenment and reproduction theorists is difficult since there has been a

tendency for different researchers to examine different value domains. These range, for example, from attitudes towards subordinate groups (Jackman and Muha, 1984; Weil, 1985; Kane 1995), to attitudes towards dominant groups (Guimond et al., 1989; Baer and Lambert, 1990), to attitudes towards social institutions (Guimond et al., 1989; Baer and Lambert, 1990) to attitudes towards social policy (Kane, 1995). Although most studies contain some measure of attitudes towards minority groups, even within these categories the specific subordinate groups often vary across studies (e.g., Jews, Blacks, immigrants, women). This makes it difficult to discern whether the conflicting results of studies merely reflect the use of different measures of values across studies or if they represent real differences in attitude change. The fact that most studies do find a change in attitudes towards minority groups, however, probably means that education has some effect on attitudes, but the extent and significance of these differences are still very unclear.

It is also worth noting that the historical discussion of Canadian universities provides more support for reproduction theory than for enlightenment theory. As pressures on universities mount and administrators become more intent on creating an institution based on market logic with an occupational-oriented curriculum, the underlying ideology of the university becomes increasingly one of individual achievement. Insofar as labour market success is believed to be a function of individual talent or tenacity, and as this perspective further penetrates the foundations of the university, it follows that students will be less likely to internalize structural explanations of inequality. In accordance with the reproduction of inequality theory, the indirect effects of external pressures on the university should be one of maintaining existing class, gender and racial divisions.

Yet, as discussed in the previous chapter, the university is not just a reflector of external pressures, but also has a long tradition of initiating social change from within. In this regard, the ideology of the cultural left may also have an effect on attitude change among students, perhaps promoting values of race and gender equality.

Finally, it needs to be noted that with few exceptions (e.g., Baer and Lambert, 1990), most of this body of research is American. Yet, there may be sufficient differences between American and Canadian value bases to question the transferability of the findings to the Canadian context. Nevitte and Gibbins' (1990) cross-national analysis of the ideologies of students in 5 Anglo-American countries (including the United States) found that Canadians were significantly less rigidly aligned with the left-right dichotomy, suggesting that they display a much lower level of ideological coherence than Americans. As pointed out by Lipset (1990), the tension between individual rights and democratic principles has been a long-standing theme in American history that translates into a distinct set of social and political values compared to those of their northern neighbours[11]. In addition, research has shown significant cross-national differences in attitude changes. Weil (1985), for example, found that the enlightening effects of education are positively related to the length of time a country has had a liberal-democratic regime. These arguments and findings provide some reason to question the transferability of the American research to Canada.

METHODOLOGICAL ISSUES

Model design problems found within this research area lead us to question the validity of the findings of both theoretical positions. Specifically,

there are three major empirical problems in this research. One of these problems will be fully dealt with in the proposed dissertation, while the other two can only be partially solved given our present knowledge of the field and available data.

Conceptualization and Measurement Problems

The first area of concern is related to the attitudinal measures used to approximate the respective values of liberalism and conservativism or adherence to the dominant-counter ideology. On the one hand, some researchers use a small set of narrowly-defined measures of liberalism and tolerance. For example, Baer and Lambert's (1982) measure of dominant ideology only includes responses to four survey questions. On the other hand, however, there is also the problem of using too many measures without testing to see if they represent the same dimension. Jackman and Muha (1984) use a total of 43 attitude items which they group together into 6 different kinds of attitudes according to their own logic, but with no theoretical grounding or statistical testing of their structure. In fact, most models in this research literature are based on the assumption that the attitude items measure a single dimension of dominant-counter ideologies or conservativism-liberalism.

Further, with few recent exceptions (e.g., Clement and Myles, 1994; Kane,1995), few works have included a measure of attitudes towards women and women's roles. Yet the effects of higher education on attitudes towards gender issues are important for several reasons. First, as mentioned, the demographic composition of the university has changed so that women now make up a slight majority of the student population. Second, the increasing attention to and understanding of women's issues contributes to the attitudinal

domains that comprise the value of equality. Thus, gender issues now hold a prominent place in the study of ideology.

There is good reason to question the extent to which people's attitudes reflect a single underlying ideology on a conservative/liberal or left-right scale. Some authors have argued that the left-right continuum is an ideological structure imposed on the public by the antagonistic nature of the political arena and does not reflect the way people organize their attitudes and values in their own minds. Braithwaite (1994) suggests that our penchant for an ideological continuum with one dimension results from dominant political institutions (and the media) couching their choices on a left or right platform. For example, individuals may simultaneously believe in economic prosperity and environmental conservation, but since they are presented with these issues in absolute 'either-or' terms by their political representatives they are forced into categories that may be inconsistent with their values.

Indeed, assumptions with regard to ideology are currently a matter of debate. Abercrombie, Hill and Turner (1980), for example, have shown that although the mechanisms of ideological transmission (e.g., the education system and the state) are well developed in late-capitalist society, internal divisions of economic interest within the dominant class have lead to an incoherent dominant ideology, perhaps even to the point of meaninglessness.

In fact, some research indicates that attitude structures may be bi-dimensional or even random. Erwin's (1993) analysis provides indirect evidence that individuals may be conservative on some issues and liberal on others. Her examination of the ideological propensities of members of the pro-family movement, which is often considered to be conservative in the extreme, found that this group tended to be more liberal on many political dimensions than the

larger population (e.g., by exhibiting strong support for government commitment to help the poor and a greater distrust of big business). More direct evidence of multi-dimensionality has been presented by social psychologists. Fleishman's (1988) analysis of political and social attitudes suggests that there are at least two dimensions of attitudes that are unrelated (economic policy and individual liberty). Rokeach and Ball-Rokeach (1989) also challenged the prevalent use of 'left-right' as an ideology arguing that values are more complex. Rather, by combining low and high degrees of the two values of freedom and equality, they were able to typologize four ideologies (socialism, communism, liberalism and conservatism). Yet, subsequent research has only been able to find evidence of the 'equality' dimension while the 'freedom' value did not prove to be a useful discriminator. Although debates continue over the number and content of the components of sociopolitical ideology, there has been fairly consistent support for the inclusion of 'equality' as at least one of the components.

It has also been suggested that in contrast to earlier decades, the 1980s and 1990s comprise a unique period where political ideas are more fluid and therefore less predictable. With a decline in classed-based politics and a rise in the importance of gender and racial minority issues, it is argued, the political climate presents a much more involved set of ideological options for today's youth than for earlier generations (Nevitte and Gibbins, 1990; Inglehart, 1984).

The possibility of multiple underlying dimensions to political and social attitudes is an important consideration, particularly in light of the considerable amount of research showing variable findings. As previously noted, the findings in this research tradition are very mixed. While some investigators have found evidence to support the liberalizing effects of university, others have found that the change in values is by no means consistent across attitudinal dimensions. In

other words, education can have positive effects on attitudes towards some groups, but it can also have negative or null effects on attitudes towards other groups. Perhaps, as the social psychological research suggests, the structure of attitudes is much more complicated than either theory is able to explain. People may hold a combination of liberal and conservative attitudes, depending on the attitudinal domain. For example, it is possible that one person may hold conservative attitudes towards immigrants, but be quite liberal in her or his attitudes towards gender inequalities. Unfortunately, however, the number of dimensions and what they might represent has not yet been fully established. Regrettably, models that attempt to examine the effects of education on attitudes and values are limited by our current inability to delineate the appropriate dimensions of sociopolitical ideology.

At the very least, both problems (using insufficient quantities of attitudinal items and inadequate specification of their dimensions) indicate that research designs should include as many different kinds of attitudinal items as possible, and should statistically test their underlying dimensions (e.g., by use of factor analysis). Moreover, it appears that at least one of the dimensions should represent the value of equality.

Rigidity Problems

A second criticism of these studies is that they tend to view the university exclusively as either a reflector of society or a changer of society. Reproduction theorists perceive the university only as an ideological apparatus that reflects the larger structures of capitalism and class inequality, but never as a proactive institution. Conversely, enlightenment theorists narrowly see the university in proactive terms as an institution that changes the larger society, but they do not

acknowledge external social, political and economic influences. Yet, as the earlier historical discussion demonstrates, universities are institutions that interact with the rest of society. The relative autonomy of the university makes it possible to exert change outwards. At the same time, universities (and particularly state-funded Canadian universities) do not operate in complete isolation, but are accountable to the various configurations of public interests. Universities may exert powerful effects that shape the wider society and at the same time reflect elements of the dominant ideologies in their research and teaching mandates (Altback, Berdahl and Gumport, 1994).

Neither theory fully captures the true nature of the university as a unique social institution. Thus, the rigidity of these theories may, in part, account for the difficulty that researchers have had in finding consistent support for their positions. It is conceivable, for example, that attitude changes vary depending on the political and social orientations of a specific university. This is more likely the case in the United States than in Canada, however, since there are greater differences across American universities in academic focus. Nevertheless, it is a contingency that has not been examined. It is also possible that as universities change over time, their effects on students alter in correspondence with institutional change. Unfortunately, testing this possibility requires presently unavailable, longitudinal data over a time span that covers several decades. One group of Canadian researchers, however, has outlined a theoretical contingency that may be a partial solution to the rigidity problem.

A Contingent Approach

Guimond, Begin and Palmer (1989) and Guimond, Palmer and Begin (1989) point out that the university is not a homogenous entity, but that the values associated with any particular discipline vary significantly. As a result, the effect of higher education is contingent upon the student's area of concentration. As their program name suggests, students from the liberal arts may become more liberal, whereas students from business and commerce may become more conservative. Guimond et al. (1989) found that, in the province of Quebec, social science students appear to be more tolerant towards immigrants, socialists and unions than were business or natural science students.

In line with the emphasis of reproduction theorists, Guimond, Begin and Palmer (1989) also explore the possible underlying processes of attitude construction. In their examination of the social conditions under which causal judgements are formed, they find that social science students attribute more importance to 'system-blame' than 'person-blame' explanations for unemployment and poverty. Thus, they argue that contrary values shifts are a result of different bases for evaluating social groups: social science and humanity students are encouraged to rely on structural explanations for inequality whereas individual explanations are fostered in business and commerce. Students from the social sciences would reason that some groups are disadvantaged because they have been systematically denied the same opportunities as other groups. Business students, on the other hand, might be more likely to argue that inequality exists because of individual differences in ability or ambition. As a result, social science students are less accepting of the bases for inequality and more tolerant of minority groups than students from other disciplines.

The notion that the effects of education are contingent upon program of study has enjoyed some empirical support. In addition to Guimond et al.'s two studies (1989,1990), Selznick and Steinberg (1969) found that American students majoring in the social sciences and humanities were less likely to express anti-Semitic views than those who majored in the sciences and professions. Hoge and Hoge's (1984) panel study found that respondents who obtained an MBA or MD became more favourable to the principles of free enterprise, while the reverse was true for PhD and EdD students. Astin's (1986) American study of over 200,000 students showed that students in the social sciences underwent greater-than-average increases in liberalism, while majoring in engineering, mathematics or the physical sciences led to less-than-average increases.

Baer and Lambert (1990) have since attempted to disprove Guimond et al.'s contingency theory. These reproduction researchers found that although business and professional students are more likely to endorse the dominant ideology, education has no effect on the attitudes of social science students. This article signals the beginning of a heated debate between Baer and Lambert, on the one hand, and Guimond et al., on the other, that has been published in several subsequent notes and articles in The Canadian Review of Sociology and Anthropology[12]. What the debate only marginally addresses, however, is the possibility that students pre-select themselves into the different programs. This issue is the third, and perhaps more critical problem that is not only overlooked by Baer et al. and Guimond et al., but is also a typical problem of the sample designs employed by many of the other investigators in both theoretical camps.

Sampling Problems

With few exceptions (none of which are Canadian)[13], research into the question of the effects of education on attitudes has relied on cross-sectional data, leaving this body of work open to criticisms of misspecified causal order. These models are unable to distinguish between the real effects of education on attitudes and differences between individuals that were present prior to their educational experiences. Cross-sectional data are not generally useful for dynamic longitudinal models and may even result in quite different findings (Menard, 1991; Menard and Elliot, 1990). Conversely, panel data provide an opportunity to observe individual changes over time, thereby increasing the reliability of the measures of change (Lieberson, 1987).

Using the same panel data examined in this study, prior research by myself and Harvey Krahn, in fact, suggests that individuals who opt to attend university are already more likely to be tolerant (of immigrants) prior to their exposure to university than those who do not participate in this social institution. However, after controlling for this selectivity bias, significant changes in attitudes were still found, but not by program of study (Sorensen and Krahn, 1996)[14]. Other research using panel data examined medical schools as agents of social change and found the presence of a selectivity bias: although medical students exhibited a greater attachment to the importance of patient contact upon graduation in 1974, there was a strong relationship between these attitudes and medical students upon entrance to medical school (Chappell and Colwill,1981).

Given these findings, it is clear that to verify the effect of education on attitudes it is necessary to measure the same individuals' attitudes before and after their exposure to the university. Only this way will we be able to rule out the possibility (or at least control for it) that those individuals who attend university

are already more liberal-minded than those who do not attend (or that students enrolling in the social sciences are more liberal prior to their exposure to university).

SUMMARY

Together, these three problems are typical of the research on education and attitudes to date. While this study will not completely overcome the problem of identifying the multiple dimensions of ideology, it does go beyond existing research in this regard. And while we are not yet in a theoretical position to fully account for the interactive nature of the university, a test of the contingency theory of education's effects more closely replicates the complex realities of the university experience. Finally, and perhaps most importantly, by employing a panel data set of Canadian youth, this study begins to disentangle the contradictory and inconsistent results that characterize much of the cross-sectional research in this literature.

THE BLACK BOX: MECHANISMS OF ATTITUDE CHANGE

The research that has been discussed so far speaks to the question of *why* higher education changes values but very little has been said about *how* this happens. What is it, exactly, about the university that fosters value change? There is very little sociological research on the mechanisms of attitude change and even less on how attitudes change within the university. At best, the literature speculates about two primary possibilities. One relates to the transference of values cognitively (e.g., through curriculum content) and the other socially (e.g., via a general sub-cultural environment) with enlightenment theorists tending to favour the former and reproduction theorists the later.

In terms of the cognitive transference of values, enlightenment theorists have proposed at least three possible mechanisms of attitude and value change that concern the content of information imparted in the classroom. While some authors favour certain versions, others argue that all three mechanisms work together to foster positive value change in students. First, it has been argued that illumination comes through students' exposure to democratic and less-prejudiced curriculum in their courses. Robinson and Bell (1978), for example, propose that through exposure to the main intellectual achievements of Western Civilization, education brings an increased familiarity with the central values, particularly of equality. The history of democratic revolutions is presented to students as 'sacred past', thereby instilling a more complete commitment to the idea of equality as a positive value[15]. Using a similar line of reasoning, Quinley and Glock (1979) maintain that the curriculum of higher education reduces prejudice by providing students with more knowledge about minorities and about the historical factors that lead to minority-group differences.

Another related explanation for why students become more enlightened is in line with the principles of a liberal education. Here, it is maintained that the key to enlightenment is exposure to diversity. Since higher education involves increased illumination through exposure to diverse modes of thought and perspectives, the irrational bases for intergroup conflict (or inequality) can no longer be justified. Lipset (1981) proposes, for example, that education increases exposure to diverse social stimuli resulting in significant reductions in tendencies towards authoritarianism and prejudice. Lastly, it has also been argued that systems of higher education provide students with the cognitive skills required to detect and reject prejudice. Again, Lipset (1981) suggests that students develop higher levels of cognitive sophistication that are required for the adoption of the norms of democracy and equality.

In contrast, it is also possible that value change comes socially from exposure to the general campus culture and its structure. Students may be influenced by official mandates of the university, by the hiring and promotions structure, by engaging in informal discussions in coffee houses, or by being exposed to the ideology of various campus media. For example, it may be that students' values are influenced by liberal discussions in campus newspapers. On the other side of the debate, reproduction theorists argue that the very fact of attending university leads to a strong identification with ideas of individual achievement and a rejection of structural solutions to inequality.

Although this study cannot specifically confront the question of how values change, the results may offer some clues as to whether the socialization process takes place primarily in the classroom or on campus at large. This issue will, therefore, be taken up again in the concluding chapter.

ENDNOTES:

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1. Milan's (1991) recent review of the literature on higher education found that 98 percent of journal publications were located in the functionalist framework.

2. See Webster (1984) for a good review of modernization theory.

3. Although this sounds remarkably similar to reproduction theorists who argue that education socializes students to accept the prevailing ideology, there is an important distinction between the two positions in terms of the effect on society. Functionalists maintain that education has a harmonizing effect on all society by ensuring that youth will be smoothly integrated into the labour market, while Marxists argue that this integration only serves the needs of capital.

4. Gouldner (1967) is cautious in his predictions as to whether the New Class will succeed the old money class by acknowledging the many influences that must be taken into account for this to occur; most notably the power of other classes with which the New Class must compete. He further suggests that the New Class is not entirely emancipatory, but also contains the seeds of a new kind of domination.

5. The relationship between attitudes and behaviour is not yet clearly understood. While numerous studies fail to find a significant relationship, research by Ajzen and Fishbein (1980) suggests that attitudes may relate to behaviours after all, but that it is crucial that the attitude measure correspond to the action, target, context and time categories of the behaviour (Petty and Cacioppo, 1981).

6. Research shows that only about 1 percent of the entire population are politically active (Sutherland, 1981). At the most, it might be argued that university graduates have an increased likelihood of becoming more interested in politics and social issues (e.g., more likely to vote), but again this may not be an education effect in terms of attitude and value change, but a class-based outcome.

7. Critical analyses of youth culture, however, have argued that the reproduction of the lower classes is more complicated than the simple and direct transmission of respect for meritocracy. Rather, lower class youth do not blindly accept their class fate, but exhibit resistance by constructing anti-school subcultures that are attempts to make sense of their subordination and struggle against dominant institutions such as school. Ironically, their rebellious behaviour condemns them to educational failure such that they reproduce themselves as a class (see Davies, 1994 for a

review of Resistance Theory). Nevertheless, both Marxist versions view education as a legitimizer of inequality and reproducer of social classes that can be exploited in the productive process, rather than an avenue to increased equality as educational functionalists argue.

8. While Porter was critical of the elitist system of education in Canada, his solution of widespread educational expansion was clearly a functionalist answer. He argued that Canadians suffered from mobility deprivation because the current small and elitist education system was not only inadequate for the needs of industry, but also failed to develop the talents of the individual (Porter, 1979).

9. Another related body of work uses Canadian data to test different aspects of the dominant ideology theory (e.g., Curtis and Lambert, 1976; Baer and Lambert, 1982; 1990; 1995). In contrast to the focus on individualism as a dominant ideology in American society, these authors maintain the dominant ideology in Canada would include support for the rights of property, the profit motive, the continuing dominance of big business in the Canadian economy, compliant labour unions, and maintenance of the military. Support for these institutions is an indication of support for the justification of economic inequality. Thus, insofar as higher education institutions cultivate greater acceptance of these components of the dominant ideology, they also reinforce existing power structures of dominance.

   Unfortunately, unavailability of the appropriate data precludes the testing of this particular version of reproduction theory in this study. However, it is contended here that the difference between the two versions is not a matter of Canadian versus American values that comprise the dominant ideology, but varies by the purely theoretical judgements made about its material basis. If it is believed that class divisions are derived from the occupational structure and its associated inequalities, then the dominant ideology is presumed to make reference to the economic laws of supply and demand, merit and the functional importance of different occupations. If the basis of inequality is assumed to be accumulation, then dominant ideology is seen to legitimate the appropriation of profit (Abercrombie, Hill and Turner, 1980). Thus, it can be argued that the American literature defines the dominant ideology on the basis of occupational structure while the Canadian sociologists use capital accumulation as the defining criteria for the dominant ideology. Whether or not the dominant ideology in Canada is primarily based on capital accumulation as opposed to occupational structure is a debate that will not be taken up here. However, it is self-evident that occupational structure has a bearing on class divisions and the dominant ideology in both countries.

10. Although the following discussion focuses on the differences between enlightenment and reproduction theory, it is important to note that they also have some similarities. For example, by claiming that higher education serves the needs of capital it is clear that reproduction theory also employs functionalist arguments to sustain its case. In other words,

just as enlightenment theorists argue that higher education functions as an equalizer of society, reproduction theorists argue that higher education functions to reproduce inequality. Nevertheless, the linkages between enlightenment theory and functionalism, as a paradigm, cannot be dismissed.

11. Several comparative political sociologists have provided contradictory evidence by pointing out, for example, that regional differences within each country preclude the validity of treating Canada or the United States as homogenous cultural entities (e.g., Baer, Grabb and Johnston, 1993).

12. This debate primarily revolves around their respective depictions of the extent to which the Canadian social sciences exhibit a 'radical', or at the very least, counter-ideological, perspective. Further, the two camps defend their use of different reference points from which to compare the attitudes of university students. While Baer and Lambert (1990) use those without any higher education as a point of comparison, Guimond et al. (1989) make their comparisons within the university student population. Other issues include their interpretation of the results, such as Baer and Lambert's null findings for the social sciences, and the generalizibility of Guimond et al.'s Quebec sample to Canada (Baer and Lambert, 1990, 1995; Guimond and Palmer, 1994).

13. As far as I am aware, there are only three existing studies of attitude change that are nationally (American) representative and longitudinal (Sears, 1981 ;Hoge and Hoge, 1984; Alwin, Cohen and Newcombe, 1991). These three data sets, however, have been primarily constructed to examine the development of attitudes over the entire lifespan and not specifically to assess the impact of education.

14. Since this study was intended to examine students' attitudes towards immigrants (and only used one dependent measure of tolerance towards immigrants), it is premature to conclude that the program of study contingency can be rejected.

15. The claims of these enlightenment authors, however, must be questioned to the extent that accounts of Western civilization also present examples of tyranny, hypocrisy and prejudice. Further, pressures to amend curriculum content so that the history of Western Civilization is no longer presented as 'sacred past' reveal the many instances of ethnocentrism and a long-standing history of sexism and racism. This new course content is more likely to reveal the limitations of democracy.

CHAPTER 4

METHODS

INTRODUCTION

This chapter describes the data used to test the theoretical models outlined in the previous chapter, and also discusses variable measurement and index construction.

The intent of this project is to examine the socializing effects of the university. In contrast to other environments that may also affect how youth view the world (e.g., early work experiences and familial or peer relations), the university presents a particularly useful arena for research as it has a somewhat more self-contained structural composition in which we can examine the characteristics of many individuals who are exposed to the same broad conditions. By comparing attitude change among youth who attend the university with those who do not, we can be more confident in attributing differences to the processes of socialization found within the environment of higher education[1]. Moreover, in contrast to much of the prior research on attitudinal change which typically uses cross-sectional data, the use of a panel data set in this study will allow us to better account for individual attitude changes and causal ordering. Finally, by using a relatively broad range of attitudinal domains, we can conduct more rigorous tests of each theory.

Multivariate models are used to test for the effects of university education on attitudes. These models are constructed by regressing attitudes (in the final survey year) on education acquired, controlling for attitudes at time one (T1), which in effect, become a measure of change in attitudes over the years.

SAMPLE DESIGN

The data used in this study are from a panel survey of high school graduates in three Canadian cities (Toronto, Sudbury and Edmonton). The original purpose of the survey was to examine the transition from school to work among Canadian youth. Although these cities were originally selected because they represent some of the regional diversity in the Canadian economy and corresponding labour markets, they also reflect some degree of diversity in terms of social and political culture and, importantly, university institutions[2]. Toronto, being the largest urban centre in the country with a strong local economy, has two major universities: the University of Toronto is the oldest and largest university in Canada. York University is less than 40 years old and is the third largest Canadian university. Sudbury, the smallest of the three cities, is a prime example of a single-industry community in a more remote part of the country and has one small university (Laurentian University). Edmonton is intermediate in size, with a reasonably diversified economy, but its fluctuating unemployment rates demonstrate just how much of its economy is dependent on the oil industry. The University of Alberta is the fourth largest university in Canada.

The diversity of these survey settings, however, should not be overstated. Despite popular notions of extensive political differences between residents of Alberta and Ontario, research has shown that as education increases these differences become almost negligible (Fletcher and Forbes, 1990). Moreover, research that examines regional differences in ideology suggests that Quebec and the Atlantic provinces are the most distinct areas of Canada (Fletcher and Forbes, 1990; Baer, Grabb and Johnston,1993). Nevertheless, in the absence of a national sample, the three survey locales represent a reasonable cross-

section of Canadian settings with somewhat contrasting economies, political tendencies and universities.

Data were collected in 1985, 1986, 1987 and 1989 for all three cities, and extended to 1992 for the Edmonton sample. High school seniors were first surveyed in their classrooms in May, 1985, just prior to their graduation from high school. This baseline survey was followed by mail surveys in 1986, 1987, 1989 for all three cities, and in 1992 for Edmonton.

In the city of Edmonton, 6 high schools (and 66 classes within them) were initially selected on a non-random basis but with an effort to generate final sampling units (students) from a diversity of socio-economic backgrounds and with a mix of vocational and academic characteristics. All students were given the choice not to participate, and those younger than 18 years of age were required to obtain their parents' written consent to participate in the study. The baseline sample contained 983 students. In each follow-up survey, those individuals who had not completed the previous questionnaire were dropped from the sample, resulting in a final sample of 404 individuals for the 7-year survey conducted in 1992. Based on the number of initial respondents in 1985 who gave names and addresses for follow-up purposes, this represents a response rate of 45%.

Similar sampling strategies were used in the two Ontario cities. A total of 754 questionnaires were completed in Toronto and 492 in Sudbury in the first year. Follow-up surveys were completed by mail and resulted in a response rate of 31% (n=207) for Toronto and 37% (n=125) for Sudbury in the final year of the survey for these two cities (1989). The total 4-year, tri-city sample size is 836 with an overall response rate of 44% (Krahn and Mosher, 1992).

Table 4.1 below presents some key characteristics of the two samples (1985-1989 and 1985-1992). There are slightly more females than males in both samples. The majority of respondents from both samples were 18 years of age in the first year of the study (1985). Respondents in the 4-year sample, however, were slightly older at Time 1: 34.8% of respondents in the 4-year sample were over 18 years of age compared to only 19.6% of respondents in the 7-year sample. Presumably this difference can be explained by the additional grade 13 that was still offered in Ontario at the time of the survey. Most respondents were single when last surveyed, although this status was much more prevalent within the 4-year sample. Few respondents from either sample come from visible minority origins (13.4% and 13.0% respectively). Respondents in the 7-year sample come from slightly higher socio-economic backgrounds with slightly more subject's parents earning above average incomes and holding university degrees.

TABLE 4.1
SAMPLE CHARACTERISTICS

	4-Year Sample (n=836)	7-Year Sample (n=404)
	Percent	
Gender		
Female	56.1	53.0
Male	43.9	47.0
Age in 1985		
17	8.0	11.1
18	57.2	69.3
19	27.0	16.1
20+	7.8	3.5
Marital Status (when last surveyed)		
Single	81.2	56.8
Other	18.8	43.2
Visible Minority Origins		
Yes	13.4	13.0
No	86.6	87.0
Parent's Finances[1]		
Below Average	9.4	9.4
Average	54.4	49.6
Above Average	36.2	41.0
Father's Education		
Less than high school	42.3	35.0
High school	16.5	18.3
Some post-secondary	19.0	21.7
University degree	22.2	25.0
Mother's Education		
Less than high school	44.3	36.4
High school	25.7	30.8
Some post-secondary	15.8	17.2
University degree	14.2	15.6

1 This self-reported measure (at Time 1) asked students to locate their parent's financial situation on a 5-point scale ranging from poverty level to wealthy. This variable was collapsed by merging the two end-point categories.

RESEARCH QUESTIONS AND DESIGN IMPLICATIONS

Although the socializing effects of the university might influence personal values[3], this study focuses on possible changes in the economic and social values of students as measured by their attitudes towards a variety of social groups, institutions and policies. As the debate between enlightenment and reproduction theorists reveals, there is little consensus in the academic community over the effects of a university education on attitudes. Moreover, we cannot be certain about the results of much of the prior research since the empirical models used to test for changes employed cross-sectional data and/or used narrowly- or ill-defined measures of conservatism and liberalism. Thus, the first and most fundamental question to be asked is:

1. Does university education cause a change in social and economic attitudes among students?

To answer this question, two basic research design issues are addressed. First, in order to isolate university education as a cause of attitudinal change, differences between those who have participated in the university system and those who have not are examined. Second, to more firmly establish causal change in attitudes, students' attitudes at T1 are statistically controlled in the model.

The second question, concerning the direction of attitude change observed among students, is informed by the respective theories of enlightenment and reproduction:

2. Do students become more conservative as reproduction theory suggests or more liberal and tolerant as enlightenment theory proposes?

To properly address this question, we must test the sample for selectivity bias: are sample members from each educational group equally likely to exhibit

liberal or conservative attitudes in the first survey year? Based on prior research using the same panel data, there is some reason to believe that university students are more liberal in some respects prior to their educational exposure (Sorensen and Krahn, 1996). Testing for the presence of a selectivity bias involves examining the differences in attitudes between university and non-university sample members at T1. If a selectivity bias is found, the importance of controlling on attitudes at T1 is further accentuated when determining the direction of attitude change. If we find that, prior to their participation in higher education, students are more liberal-minded than non-university sample members, then this difference needs to be incorporated into the model so that the effects of education can be distinguished from prior sources of attitude and value development. Moreover, such a finding would support the criticisms of prior, cross-sectional research where tests for the presence of a selectivity bias were impossible. In other words, the positive attitude changes found in prior studies that did not use panel data may have merely been a reflection of more liberal attitudes among future university students before they attended university.

To specify the models designed to test the relative value of enlightenment and reproduction theory the empirical expectations of each theory need to be clearly identified. Enlightenment theory proposes that students will become advocates of equality in a general sense. Here, the conservative/liberal continuum is defined by the extent to which equality is valued. The value of equality can be measured in several ways. For example, an individual will be seen to value equality if they express positive and tolerant attitudes towards racial minorities. Similarly, it will be concluded that equality is valued if an individual rejects traditional gender roles. Additionally, we can define someone as liberal if they recognize that not all groups are treated equally in society. Put another way, a conservative orientation can be measured by the extent to which

one believes that equality has already been successfully achieved (Marchak, 1981). To test the prediction of enlightenment theory that higher levels of education will produce more liberal attitudes, measures of attitudes towards racial minorities specifically and inequality in general will be used. In addition to these two attitudinal areas, another dimension is added to this study by including several measures of attitudes towards gender roles and issues, a previously under-explored area.

The kinds of changes predicted by reproduction theorists fall within a different dimension of attitudes[4]. First, reproduction theorists maintain that the liberal/conservative scale of valuing equality proposed by enlightenment theorists is superficial and only measures a veneer of democratic ideals. Thus, whether students become liberal or conservative on this scale is viewed as unimportant or at least of little consequence by reproduction theorists. Rather, it is argued that to determine whether or not students undergo more meaningful attitude change, it is necessary to examine their views on the underlying causes of inequality and their related solutions. Here being liberal or conservative is distinguished by the extent to which one employs individual versus structural explanations for inequality. The propensity to explain inequality on the basis of individual characteristics would be interpreted as an indication that students have not internalized explanations of the material basis for inequality. Thus, the key discerning test for reproduction theory is the relationship between university education and individual/structural explanations for inequality. Accordingly, the analyses in this study include measures of the extent to which respondents employ individual versus structural explanations of inequality.

A possible interpretation of the two theories would place their outcomes as diametrical opposites (with one predicting increasing liberalism and the other predicting increasing conservatism). However, I have chosen to view their

predicted outcomes as gradations along a continuum that measures degree of attitude change. To argue, as reproduction theorists do, that change in attitudes regarding equality does not represent a change of any importance is perhaps too strong. Rather, becoming more tolerant of minority groups and aware of their unequal treatment represents a positive change that exemplifies a more sensitive and caring perspective. Accordingly, the predictions of the two theories represent a continuum of attitude change with the enlightenment measures of tolerance and democratic ideals measuring less substantial change than the reproduction measures of attitudes about the underpinnings of inequality.

To illustrate this perspective, Figure 4.1 depicts the possible range of outcomes for students depending on the attitudinal domain associated with each theory. In contrast to the specification of reproduction theorists that becoming more liberal on the enlightenment measures is meaningless, this model depicts this outcome as a modest effect of attending university, but still an effect that is of some significance. This also means that there are more opportunities for students to exhibit liberal tendencies, but among these there are important variations in degree of change. By placing the possible outcomes on a continuum, the strongest version of liberal outcomes would be if students both increasingly value equality and shift towards structural solutions to inequality (ultra-liberal). The second level of liberalism has been labelled, for lack of a better expression, "economic liberalism" and depicts the unlikely outcome that students become more liberal on the individual/structural dimension, but not on the equality measures of enlightenment. This is followed by the classic liberal category where students only exhibit a greater attachment to the ideal of equality. The figure also highlights the fact that the conservative predictions of reproduction theory will only be supported if students do not become more liberal on the attitudinal dimensions represented by each theory.

FIGURE 4.1
TYPOLOGY OF OUTCOMES

Change in Reproduction Measures	Change in Enlightenment Measures: Yes	Change in Enlightenment Measures: No
Yes	Ultra-Liberal	Economic Liberal
No	Classic Liberal	Conservative

In situations where we have two competing theories, it is usually presumed that finding empirical support for one theory automatically discredits the other theory and vice versa. Yet, if we find support for enlightenment theory, this does not automatically discredit reproduction theory. Similarly, if we do not find support for enlightenment theory, we cannot automatically assume support for reproduction theory without testing the further prediction that individualistic explanations for inequality are linked to exposure to higher education. Support for reproduction theory will only be found if students exhibit a greater tendency to explain inequality by drawing upon individual differences between groups rather than structural differences.

A third perspective that has only recently been examined in the literature contends that students adopt ideologies distinct to their academic discipline. Thus, the third basic question in this research addresses the possibility that students change their attitudes depending on their program of study:

3. Does program of study differentially affect the direction and extent to which students' values change over the course of their university schooling?

For the most part, this model replicates Guimond et al.'s (1989) research by testing the differences in attitudes found between the social sciences on the one hand, and business programs, on the other hand. An attempt to specify a more refined model, however, will be made. Unlike Guimond and his colleagues, we will be able to test for presence of a selectivity bias on the basis of program of study. For example, it may be that students opting into the social sciences are more liberal apriori than those students who enter into business. In line with Guimond et al.'s argument, it is predicted that a change in attitudes is contingent upon program of study such that participation in the social sciences leads to more liberal attitudes while students in business programs become more conservative.

The findings of this section of the analysis will have implications for reproduction and enlightenment theory, depending on the extent and direction of change found. If the results uphold the prediction that program of study differentially affects students' attitude change, each theory will be thrown into question, at least in terms of their present specification. Such results will be particularly problematic for reproduction theory and lead us to question the fundamental assumption that the primary function of higher education is to meet the ideological needs of capital.

As mentioned, the literature that represents the various theories is somewhat imprecise in its specification of the processes of attitude change. Rather, the tendency has been to focus on the direction of change leaving the mechanisms and processes of change to researchers in other disciplines such as social psychologists. Conversely, the social psychological literature often overlooks the larger mechanisms of socialization (e.g., the education system) in favour of individual and psychological processes of change. Both tendencies are understandable, since no research project can cover every aspect of a question.

However, by examining possible differences in attitude change on the basis of program of study, we might gain some understanding of these mechanisms. If we observe no program differences, we have some evidence to reject curriculum as an important contributor to attitude change. Alternatively, findings that support the contingency theory would lend credence to the idea that the course content and cultural mileux specific to each curriculum subset can affect attitudes. These conclusions, however, would be tentative and only indicate a possible direction for future research. It is not the intent of this project to unravel the specific components of education that lead to attitude and value change, but to ascertain the existence and direction of change that may or may not result from attending university. Establishing the existence of change is a necessary first step in any research agenda that is interested in the question of attitude and value change.

In answering these three research questions, two basic models will be used with each one employing the same attitudinal items. The first model will test the reproduction and enlightenment theories by regressing attitudes towards racial minorities, gender roles, inequalities in general, and explanations for these inequalities on educational attainment (Chapter 6). To test for the contingency theory, program of study will simply be added to the equation (Chapter 7).

VARIABLE MEASUREMENT

Before outlining the variables to be used, clarification of the definitions and relational attributes of the terms 'attitudes', 'values' and 'ideology' will help to conceptualize and then operationalize these key dependent variables. While there exist several definitions of attitudes and values, perhaps the best way of defining these concepts is to draw out their commonalities and differences. Both are cognitive and internal beliefs and both contain an evaluative tendency where

preference is shown for different modes of conduct or end products. The difference lies in their specificity: while values refer to enduring generalities and more abstract principles, attitudes are less stable and are held towards more specific instances of those generalities (Rokeach, 1973). Attitudes are typically viewed as component parts of values where the measurement of several similar kinds of attitudes is said to reflect an underlying value. For example, if an individual holds an attitude against racial and gender discrimination, we might conclude that these attitudes reflect an underlying value of equality.

Yet how do these attitudes and values relate to ideology? Converse (1964) has defined ideology as a coherent world view that includes a comprehensive system of values in which ideas are central. Attitudes are component parts of values which in turn comprise ideology, an overarching system of beliefs that help individuals make sense of the world. Like attitudes and values, ideologies contain an evaluative component, but are explanations of how the political, economic and social world works, rather than simply descriptions. In the most simple terms, people can be categorized as sympathetic to one of two major ideologies: liberal and conservative. For the purposes of this research, these terms are not viewed in their everyday political sense but in the way they represent two relatively coherent and different views of the world. Taking the earlier example of an individual who holds positive attitudes towards minority racial groups that reflect the broader value of equality, we would predict that this individual adheres to a liberal-minded ideology. We can conclude that an ideology exists when "knowledge about one set of component beliefs allows the observer to predict, with a reasonable degree of confidence, what other beliefs and values might be" (Nevitte and Gibbins, 1990).

Moving from the conceptual specification of attitudes, values and ideologies towards operationalization, however, presents a much more complex

situation. As the results from the studies reviewed in Chapter 3 suggest, groups of seemingly similar attitudinal items do not always cleanly fall into a single value domain which in turn does not always reflect a single underlying ideology. For example, research over the past four or five decades has fairly consistently shown a decline in racism among North Americans, yet at the same time, there has been no noticeable increase in favourable attitudes towards policies that reflect attempts to reduce inequalities between dominant and subordinate racial groups[5]. To add to the complexity of the situation, it appears that the attitudes and values of North Americans have become increasingly fluid as the domain of issues increases (e.g., attitudes regarding sex and race). It is no longer the case that knowledge of someone's attitude toward racial inequalities allows us to predict their attitudes towards class inequalities. Nor can we always conclude that tolerant attitudes towards minority racial groups reflects an overall value of equality. An individual may feel that these groups have been disadvantaged while at the same time believe that poor people tend to be lazy. The congruence of attitudes and values can no longer be assumed to be the case, if in fact it ever could be. As Marchak (1981) points out, ideologies can rarely hold up to the test of consistency and can include values which are not congruent.

Yet, it is also an overstatement to conclude that attitudes and values are completely random and that they never comprise an ideology that is more or less cohesive. This research is designed to examine the relationship between social and political attitudes (as they reflect values and ideologies) and education. The more inclusive the range of attitudinal measures, the better our chance of assessing values and ideologies and, therefore, the more comprehensive the study.

As mentioned, the three major attitudinal domains required to test enlightenment and reproduction theory are class, race and gender inequality and

structural versus individual explanations for inequality. Since this study was initially designed to gather information on the perceptions of causes and consequences of youth unemployment among other subjects related to education and employment, and not to determine other specific attitudes, some of the key questions were not asked during every sampling point. Therefore, for some attitudinal items, the four-year tri-city data will be employed, while for others the seven-year Edmonton sample will be used. Accordingly, for some measures the results will be generalizable to the three cities, while for others we will only be able to draw conclusions about Edmonton youth. (See Appendix A for a list of the individual items and the years they were asked).

Factor analysis was used to help formulate the attitude indices. Because of the differences in questions across years and samples, two factor analyses were done with the 4-year version including all questions and the 7-year version excluding the items that were not asked in the final year. The results of this analysis are presented in Table 4.2 below. For the most part, results of the factor analysis of responses to 17 Likert-style questions correspond to the three

TABLE 4.2
INDEX CONSTRUCTION AND RELIABILITY

ATTITUDINAL CONCEPT	ITEM	ALPHA COEFFICIENT 4-YEAR SAMPLE 1985	1989	7-YEAR SAMPLE 1985	1992
General Social Problem Index[2]	How serious a problem is - racial discrimination? - discrimination against Native Canadians? - job discrimination against women? - poverty? - unemployment?	.70	.62	Not Asked	
Individual Explanations for Economic Inequality Index	Most poor people are poor because of their own lack of effort. Many younger people who get welfare are just too lazy to work. Youth unemployment in Canada is high because it is too easy to get welfare and unemployment insurance.	.57	.65	.60	.71
Structural Policies to Reduce Economic Inequality Index[3]	People with high incomes should pay a greater share of taxes. Big corporations have far too much power in Canadian society.	.28	.37	.28	.28

[2]Since these questions were all asked in the same format, they were tested to ensure that they do not measure a response set by including all 8 items that were asked in this format in a separate factor analysis. The results showed two underlying factors, suggesting that they do not measure a response set.

[3] Pearson's Correlation Coefficient was used to measure the reliability of this index since there are only two items.

attitudinal domains of equality, individual explanations for inequality and structural policies to reduce inequality. The General Social Problems Index has an alpha of .70 in 1985 and .62 in 1989 for the 4-year data set at Time 1 and .62 in 1989 (the questions were not asked in the final year of the 7-year sample). This index is a measure of the extent to which respondents value equality and, specifically, if equality has been achieved in Canada. The other two indices are meant to measure reproduction theory's emphasis on the underlying basis for inequality. The first index is a measure of the extent to which respondents draw upon individual explanations for inequality (alpha = .57 in 1985 and .65 in 1989 for the 7-year sample and .60 in 1985 and .71 in 1992 for the 7-year samples, respectively). The final index is a measure of the extent to which respondents believe that inequality can be reduced through structural changes in the economic system. Since there were only two items in this index, Pearson's correlation coefficient was used to measure the reliability of the index (r = .28 in 1985 and .37 in 1989 for the 4-year data and .28 in 1985 and 1992 for the 7-year data).

Not all relevant variables are contained in these three dimensions. But since they are conceptually useful, they will be included in the analysis as single measures of attitudes. Table 4.3 presents the single items included as dependent variables and the availability of each for the two samples. Three of the items used in the General Social Problems Index were also used as single items measuring attitudes towards racial minorities and gender roles and issues.

As with the three indices, responses to these individual items in the last year of the panel study (1989 or 1992) form the dependent variable, while answers to the same question in the first year of the study (1985) constitute a control variable. Thus, the dependent variable is essentially a measure of

TABLE 4.3
INDIVIDUAL ATTITUDINAL ITEMS

ATTITUDINAL CONCEPT	ITEM	4-YEAR SAMPLE	7-YEAR SAMPLE
Racial Minorities	Too many immigrants have been getting jobs in Canada.	Included	Included
	Discrimination against racial minorities is a problem	Included	Not Included
	The treatment of Native Canadians is a problem	Included	Not Included
Gender Roles	A husband should be mainly responsible for earning the living.	Included	Included
	Job discrimination against women is a problem	Included	Not Included
	A wife should be mainly responsible for raising children in a family	Not Included	Included

change in attitudes over a seven-year period.

In addition to these dependent variables, the key independent variable of education was operationalized as the number of years of full-time education acquired over the seven-year period. The range for the education variable is from 0 to 7, with 0 denoting no university education. Several additional control variables were also included in the models tested. These are gender, parents' income, parents' education, parents' ethnic origin, and number of months unemployed throughout the survey. Studies that examine gender differences in attitudes towards social issues have shown mixed results for most attitude domains. However, there is good empirical evidence showing that women are more strongly in favour of equality issues that directly bear on them as women (Nevitte and Gibbins, 1990; Furnham and Stacey, 1991; Clement and Myles, 1994). The two background variables of parents' financial status and education are proxy measures of class and allow us to control for the possibility that conservative attitudes are more highly valued by elite classes. Parents' ethnic origin is particularly relevant to the racial attitudes questions since youth from minority backgrounds would presumably hold more tolerant attitudes towards minority groups.

Before the results of the analyses are presented, the following chapter presents an evaluation of possible attrition biases as a result of sample members dropping out of the study before its completion. This analysis was done to determine if corrections need to be made to the samples to compensate for systematic attrition among certain groups of respondents.

ENDNOTES:

1. Of course, there are individual variations that might differentially affect the way and extent to which students' values change, but given the inability to control for some of these differences and given a relatively small sample size, we can only make general conclusions relating to the impact of university exposure.

2. Generalizations of the results to the three cities and their respective universities may be limited because we cannot be sure that all of the respondents remained in their original survey city. Yet, we may also reasonably assume that the sample members who attend university tend to go to local institutions. While this may not be the case in all instances, we do know for example that 86% of students from the University of Alberta are from the same province (Office of Public Affairs, University of Alberta, 1996).

3. Rokeach (1973) differentiated between two kinds of values as either self-centred (personal) or society-centred (social).

4. The 'Canadian' version of reproduction theory that predicts students will exhibit a stronger identification with the dominant ideology will not be tested in this research because the data are unavailable. There are no measures in the existing data set that tap into Baer and Lambert 's (1992) definition of the dominant ideology as support for the profit motive, the continuing dominance of big business in the Canadian economy, compliant labour unions, and maintenance of the military.

5. One interesting attempt to explain these inconsistent findings has been offered by Rokeach and Ball-Rokeach (1989). Their belief system theory states that studies that have found reductions in racism are faulty since they are based on absolute, rather than relational, measures of values. Rather, as Rokeach argues, in real life values are not a zero-sum game in that holding one value precludes the preference for another values. For example, people who value freedom may also value equality, but their preference for one or the other will be their rankings of values rather than their absolute ratings. Using this method, Rokeach found that out of a possible 18 values, Americans' priority for equality has in fact dropped significantly from 7th place to 12th place between 1968 and 1981.

CHAPTER 5

ATTRITION BIAS ANALYSES

One common source of error in panel data is a result of sample attrition, where sample members drop out of the survey after the initial year either because they cannot be located or they no longer wish to participate. Attrition can be problematic if participants with a characteristic that is related to the key variables in a study systematically drop from the sample, thereby biasing the sample and, possibly, the findings. For example, if we find that youth from a higher socioeconomic background are more likely to remain in the study, then the sample is biased against cases with a lower socioeconomic background. An even more serious source of bias for this study would be if we find a systematic relationship between the attitudes of interest and attrition. If, for example, sample members who tend to express more liberal attitudes are more likely to stay in the study, then the sample bias limits the generalizability of the findings.

To test for the presence of attrition bias in the sample, each independent and dependent variable (measured at Time 1) was crosstabulated with a binary 'survival' variable measuring if the sample member remained for the duration of the study *or* if they dropped out before the final survey. This test was done for the tri-city, 4-year data set as well as the Edmonton, 7-year data. The results of this analysis are presented below in Tables 5.1 and 5.2.

Looking first at the demographic characteristics of sex and age, there is fairly clear evidence that females and younger students were more likely to remain in the study for both survey groups. This trend is less apparent for

TABLE 5.1
ATTRITION BIAS ANALYSES
PERCENT REMAINING IN STUDY BY SAMPLE AND DEMOGRAPHIC VARIABLES

VARIABLES (n=975)	4-Yr. Sample TOTAL (n=2229)	EDMONTON (n=983)	TORONTO (n=754)	SUDBURY (n=492)	7 - Yr. Sample TOTAL
DEMOGRAPHICS:					
SEX					
Male	31.7	45.5	22.1	21.3	34.2
Female	44.9***	57.8***	36.1***	30.1*	48.7***
AGE					
17	56.9	69.6	30.0	29.4	57.0
18	43.6	57.2	31.7	24.0	47.1
19+	28.7***	35.2***	25.5*	27.0	25.5***
EDUCATIONAL VARIABLES:					
HIGH SCHOOL PROGRAM					
Academic	47.6	60.2	23.1	13.0	48.0
Other	26.9***	37.3***	35.8***	31.5***	0.3***
GRADES LAST YEAR OF HIGH SCHOOL					
50-59	28.8	38.4	20.9	9.3	30.2
60-69	34.6	49.9	21.3	21.6	39.4
70-79	41.0	58.1	31.4	26.2	45.8
80+	50.4***	60.7***	50.0***	40.4***	55.2***
PLAN TO CONTINUE EDUCATION IN FALL OF 1985					
Yes	38.6	54.1	27.6	25.4	43.5
No	34.6	42.7**	28.2	27.0	33.8**
PAYING JOB WHILE IN HIGH SCHOOL					
Yes	33.9	49.7	31.1	26.4	39.4
No	39.7	42.4	22.2	24.2	45.8

VARIABLE	TOTAL	4-Yr. Sample EDMONTON	TORONTO	SUDBURY	7 - Yr. Sample TOTAL
SES BACKGROUND VARIABLES					
PARENTS' FINANCES[1]					
Below Average	31.9	47.3	23.3	12.5	36.3
Average	36.1	50.9	25.8	25.8	39.6
Wealthy	42.5**	52.8	36.7**	27.7	44.0
FATHER'S EMPLOYMENT STATUS					
Full-time	39.3	53.4	30.2	25.7	43.3
Part-time	61.8	70.8	66.7	28.6	70.8
Not in Labour Force	39.0	48.3	28.6	26.4	37.3
FATHER'S OCCUPATION					
Mng/Professional	46.1	54.9	41.7	30.6	44.0
Other	33.8***	53.6	29.7*	23.7*	43.9
FATHER'S EDUCATION					
Some High School	34.6	49.1	29.3	22.2	40.0
High School Grad	41.6	55.6	32.2	21.9	44.4
Some Univ/Coll.	46.5	54.4	34.9	36.4	45.0
University Grad	43.6**	51.5	40.8*	30.7*	41.2
MOTHER'S EMPLOYMENT STATUS					
Full-time	38.5	49.3	30.8	28.7	37.3
Part-time	43.2	60.4	28.9	24.1	51.3
Not in Labour Force	35.9	51.4	23.8	24.7	42.8*
MOTHER'S OCCUPATION					
Mng/Professional	44.8	53.2	37.1	33.7	42.7
Other	38.2*	51.8	29.8	25.1	42.5

[1] This is a self-reported measure where students were asked to locate their parents' financial situation on a 5-point scaling ranging from poverty level to wealthy. This variable was collapsed to 3 categories by merging the two end-point items.

VARIABLE	TOTAL	4-Yr. Sample EDMONTON	TORONTO	SUDBURY	7-Yr. Sample TOTAL
MOTHER'S EDUCATION					
Some High School	37.4	51.4	30.3	23.8	39.3
High School Grad	39.7	52.6	28.1	22.8	43.4
Some Univ/Coll.	39.8	50.0	25.6	32.4	45.5
University Grad	45.2*	53.2	41.3	32.7	42.5
IMMIGRATION/ RACE VARIABLES					
CANADIAN BORN					
Yes	40.6	53.0	33.2	26.6	43.9
No	28.0***	44.3*	19.0***	13.6	29.9***
PARENT VISIBLE MINORITY					
Yes	36.8	61.0	21.4	18.2	44.1
No	37.6	49.9*	29.1	25.7	40.7
LANGUAGE AT HOME					
English	39.9	52.6	27.6	26.7	42.9
Other	30.5***	43.5*	27.3	16.1	30.6**

* Difference is statistically significant; Chi-Square Test ($p<.05$)
** Difference is statistically significant; Chi-Square Test ($p<.01$)
*** Difference is statistically significant; Chi-Square Test ($p<.001$)

Sudbury: the Chi-Square tests show statistically significant differences except in Sudbury. Younger respondents were more likely to stay in the study. Similarly, there is a strong indication that students from all cities and samples who are more academically inclined, and Edmonton youth who plan to continue their education are more likely to remain in the study. Although few of the socioeconomic background variables are significantly associated with attrition, the percentage difference for most of the items suggests that students from higher SES backgrounds are somewhat more likely to remain in the study. Finally, Canadian-born sample members, those with non-visible minority parents (except in Edmonton), and English-speaking students are more likely to complete the study.

In summary, these data show fairly strong evidence of a bias towards female, younger, academically-oriented, and Canadian-born students remaining in the study and somewhat less evidence of a bias towards students from a higher SES background. While this is important information, and will be considered when interpreting the results, there are two reasons why this sampling issue should not be seen as an insurmountable problem. First, attrition biases are of greater significance when estimating population parameters, but somewhat less limiting when the goal is interpretation of relationships between variables. Given the evidence of attrition bias, care must be taken when generalizing sample characteristics to the population. However, with respect to relationships found (or not found) in the multivariate analyses, we can still conclude that the relationship exists, but not necessarily for the population at large. Since the major goal of this analysis is to determine if there is a relationship between university attendance and attitude change, the attrition bias is not as problematic as if the main goal was to produce population estimates.

Second, as mentioned, the existence of a bias in the dependent attitudinal variables would pose a greater problem. Table 5.2 presents the results of the relationship between attitudes at Time 1 and subsequent sample attrition.

The results of this analysis for the three indices do not indicate a systematic pattern of an attitude bias in the sample. Few of the Chi-Square tests are significant, and the direction of bias is inconsistent across samples and cities, both within each index as well as across the three indices.

The single items measuring attitudes towards racial minorities, gender issues and gender roles also do not reveal a discernible pattern of attrition bias for the 4-year data. On the other hand, there is a tendency for respondents with more liberal attitudes to remain in the study for the 7-year sample. There are more liberal 'survivors' on two of the three measures of racial attitudes and one of the two measures of gender attitudes.

The results of the attrition analysis indicate a bias for some demographic characteristics and for even fewer of the attitudinal items. It is possible, however, that some of the relationship between attrition and attitudes may be a result of other socio-demographic attrition biases. The gender bias, for example, might be the root explanation for the attitudinal bias on gender roles. To test for this possibility, a multivariate logistic regression analysis was conducted using the 'survival' variable as the dichotomous dependent variable.

TABLE 5.2
ATTRITION BIAS ANALYSES
PERCENT REMAINING IN STUDY BY SAMPLE AND ATTITUDINAL VARIABLES

ATTITUDINAL VARIABLES[1]	4-Yr. Sample TOTAL	EDMONTON	TORONTO	SUDBURY	7-Yr. Sample TOTAL
GENERAL SOCIAL PROBLEM INDEX[2]					
No Problem	34.0	44.4	20.0	29.4	22.2
Neutral	31.1	45.5	18.0	24.7	34.8
Problem	39.6**	52.6*	30.6*	20.5	42.7*
INDIVIDUAL SOLUTIONS INDEX					
Support	45.7	59.4	25.4	23.4	46.9
Neutral	34.9	52.6	26.1	29.1	44.4
Against	36.9	46.8**	30.9	22.8	36.1**
STRUCTURAL SOLUTIONS INDEX					
Against	38.0	47.4	35.3	26.4	38.6
Neutral	35.2	47.5	24.1	24.6	38.1
Support	38.7	54.8*	28.1	25.2	43.8
IMMIGRANTS TAKING JOBS					
Agree	40.9	57.0	28.6	22.3	37.0
Neutral	37.1	49.8	25.6	27.2	41.5
Disagree	37.2	47.9*	31.5	26.4	45.8*
RACIAL DISCRIMINATION					
No Problem	37.7	50.7	29.1	29.3	40.7
Neutral	37.5	50.6	30.2	22.7	40.1
Problem	39.4	52.4	28.1	23.6	42.3

[1]See Appendix A for index legend and complete attitudinal statements.

[2]See Appendix B for attrition table of individual attitudinal items.

VARIABLES	TOTAL	4-Yr. Sample EDMONTON	TORONTO	SUDBURY	7-Yr. Sample TOTAL
DISCRIMINATION AGAINST NATIVE CANADIANS					
No Problem	32.4	43.0	24.4	22.8	29.8
Neutral	40.9	53.1	29.7	29.7	46.0
Problem	38.8	53.0	29.7	23.6	41.5*
JOB DISCRIMINATION AGAINST WOMEN					
No Problem	38.7	51.5	25.3	30.0	39.0
Neutral	36.8	49.6	27.3	20.6	40.4
Problem	39.4	53.5	30.3	22.5	43.3
HUSBAND EARN LIVING					
Agree	40.1	52.6	23.6	17.8	34.6
Neutral	36.9	54.6	25.0	19.3	42.8
Disagree	33.3**	46.1	30.4	30.8**	44.9*

* Difference is statistically significant; Chi-Square Test ($p<.05$)
** Difference is statistically significant; Chi-Square Test ($p<.01$)
*** Difference is statistically significant; Chi-Square Test ($p<.001$)

Table 5.3 shows the results when the survival variable was regressed, first on the attitude measure alone, and then on a set of dependent variables including the attitude measure, along with father's occupation, gender, and program of study in 1985. These control variables were selected on the basis of the results in Table 5.1 which showed that they are significantly related to whether or not the original sample members remained in the study. The attitudinal items of particular interest in the logistic analysis are those where the bi-variate relationship with the survival variable was found to be statistically significant (Table 5.2). An overall assessment of the effects of introducing the control variables into the equation is that, to varying degrees, they account for more of the variation in 'survival' than do the attitudinal items. For the 4-year data, for example, where there appears to be a bivariate relationship between attitudes towards the statement "The husband should be mainly responsible for earning the living" and survival rates, once gender, father's occupation and program of study are included in the model, this relationship disappears. It is also important to note that the two control variables with the greatest impact are gender and program of study, strongly suggesting that the sample be weighted on these items.

TABLE 5.3
LOGISTIC REGRESSION OF 'SURVIVAL' VARIABLE ON ATTITUDES BEFORE AND AFTER CONTROLLING ON SELECT SOCIO-DEMOGRAPHIC CHARACTERISTICS

	4-year data		7-year data	
INDEPENDENT VARIABLES	Bivariate Estimate	Multivar. Estimate	Bivariate Estimate	Multivar. Estimate
General Social Problem Index	.098	.070	.185	.043
Father's Occupation		-.158		.211
Gender		.401***		.578***
Program of Study		.923***		.663***
Age		-.269**		-.574***
Individual Solutions Index	-.122***	-.114**	.158***	.218**
Father's Occupation		-.184		.192
Gender		.381***		.582***
Program of Study		.937***		.699***
Age		-.254**		-.593***
Structural Policies Index	.021	.073	.194**	.218**
Father's Occupation		-.194		.170
Gender		.433***		.630***
Program of Study		.950***		.685***
Age		-.275***		-.589***
Immigrants taking jobs	-.040	-.042	.091*	.063
Canadian Citizen		.442***		.439*
Father's Occupation		-.121		.242
Gender		.404***		.593***
Program of Study		.960***		.666***
Age		-.211**		-.537***

INDEPENDENT VARIABLES	4-year data Bivariate Estimate	4-year data Multivar. Estimate	7-year data Bivariate Estimate	7-year data Multivar. Estimate
Racial Discrimination	.030	.025	.028	.027
Canadian Citizen		.436***		.319*
Father's Occupation		.189		.142
Gender		.323**		.416***
Program of Study		.512***		.543***
Age		-.111*		-.134*
Discrimination Against Native Canadian	.021	.020	.145**	.102*
Canadian Citizen		.201*		.159*
Father's Occupation		.145		.144
Gender		.259**		.346***
Program of Study		.498***		.579***
Age		-.136		-.201**
Job Discrimination Against Women	.029	.023	.034	.030
Gender		.367***		.420***
Father's Occupation		-.121		.136
Program of Study		.525***		.560***
Age		-.110		-.124
Husband responsible for earning living	.072**	.052	.074*	-.014
Gender		.405***		.610***
Father's Occupation		-.154		.236
Program of Study		.925***		.670***
Age		-.276***		-.583***

* $p < .05$
** $p < .01$
*** $p < .001$

On the basis of the above analysis, the 4-year and 7-year samples were weighted on gender and academic program. This was done by using the gender and academic program ratios for the full 1985 sample. The original and weighted sample distributions are shown below in Table 5.4. Females from academic high school programs in both samples and males from academic programs in the 4-year sample were weighted down to match the original sample distributions. The other two sample groups were weighted up accordingly. Regression analyses for all of the model tests were run, both with the weighted and unweighted samples, to determine the effects of weighting. In almost all cases, the general conclusions remained the same. Nevertheless, weighted results are presented in the following chapters.

TABLE 5.4
UNWEIGHTED AND WEIGHTED SAMPLE DISTRIBUTIONS:
GENDER BY ACADEMIC PROGRAM

4-Year Data

	Original Frequency	Original Percent	Weight	New Freque	New Percent
Female Academic	308	36.8	0.71	218	26.1
Male Academic	250	29.9	0.92	230	27.5
Female Non-Acad.	132	15.8	1.13	149	17.8
Male Non-Acad.	146	17.5	1.64	239	28.6
Total	836	100.0		836	100.0

7-Year Data

	Original Frequency	Original Percent	Weight	New Frequency	New Percent
Female Academic	162	40.1	0.72	117	29.0
Male Academic	126	31.2	1.06	133	33.0
Female Non-Acad.	64	15.8	1.14	73	18.0
Male Non-Acad.	52	12.9	1.55	81	20.0
Total	404	100.0		404	100.0

CHAPTER 6

SAMPLE CHARACTERISTICS AND BASIC MULTIVARIATE RESULTS

INTRODUCTION

This chapter presents the results of the multivariate analyses that examine the relationship between university education and change in social and economic attitudes. To begin with, however, a brief description of some key sample characteristics and the bi-variate relationships between the attitudinal measures and university education will be presented.

DESCRIPTIVE CHARACTERISTICS OF SAMPLE MEMBERS

Table 6.1 presents the educational characteristics of respondents for each sample. Section (a) of the table shows that the majority of sample members have some form of post-secondary education (70.5% for the 4 year and 78.0% for the 7 year sample), with over one-third attending at least one year of university. Even though our tracking of the 7-year sample included three more years where respondents could possibly attend university, compared to the 4-year sample, only about 5% more participated in this institution of higher education. Since the difference is only 5%, we can assume that most university-attending members of the 7-year sample continued their education in university rather than started university between 1990 and 1992. Put another way, these data reflect the propensity for most respondents to begin university shortly after high school graduation. Although the majority of respondents did not attend university among those who did, most students attended for at least three years

TABLE 6.1
EDUCATIONAL ATTAINMENT BY SAMPLE

(a)
Participation in Post-secondary and University Education

	No Post-Secondary	Some College	Some University	Total
4-year sample (1985-1989)	29.5	36.2	34.3	100.0 (n=836)
7-year sample (1985-1992)	22.0	38.1	39.9	100.0 (n=404)

(b)
Years completed of Full-time University Education

	0	1	2	3	4	5	6	7	Total
4-year sample (1985-1989)	65.7	4.5	6.5	14.0	9.3	n/a	n/a	n/a	100.0 (n=836)
7-year sample (1985-1992)	60.1	4.9	4.4	5.3	12.8	6.7	4.6	1.2	100.0 (n=404)

(c)
Highest Degree Attained

	No H.S. Dip.	H.S. Dip.	Other P-S Dip.	BA	Grad/Prof Deg.	Total
4-year sample[1] (1985-1989)	n/a	n/a	n/a	n/a	n/a	n/a
7-year sample (1985-1992)	1.5	31.2	37.9	26.5	2.9	100.0 (n=404)

[1] These data are not available for the 4-year sample.

years full-time (see section b). For the 4-year sample, 23% of respondents attended university for at least three years, increasing to 30.6% for the 7-year sample.

Unfortunately, only the 7-year sample members were asked about their highest degree attained (section c). Within this sample, we can surmise that of the 39.9% who attended university (section a), most attained a B.A., Graduate or Professional degree (29.4%). A significant proportion, however, also acquired a diploma/certificate from another post-secondary institution (37.9%).

Overall, our sample members are comprised of a fairly highly educated group of youth, reflecting the increasing tendency towards post-secondary participation in Canadian society. Since our primary concern in this study is with the socializing effects of attending university, one point specific to this group is worth noting. First, the benefits of using the 7-year sample can be seen since almost one-third of this sample had more than 4 years of university education, information that is otherwise missing from the 4-year sample. This means that not only can we can track the effects of university education for a longer period of time, but we are also able to make a qualitative distinction between the effects of junior and senior undergraduate education, as well as between undergraduate and graduate education. Prior research (Sorensen and Krahn, 1996) suggests that there is reason to believe that the effects of university education are curvilinear such that the later years (e.g., fourth year and up) have a stronger effect on attitude change than the first couple of years. This

possibility will be examined in the bi-variate crosstabulations presented in the next section of this chapter and more thoroughly explored in the following chapter.

Table 6.2 presents the education distributions crosstabulated by some key demographic characteristics for both the 4-year and 7-year samples. In contrast to the 4-year sample where females are more likely to go to university (37.2% compared to 32.1 of males), they are less highly represented in the university group for the 7-year sample (38.7% compared to 41.3% of males)[1]. The gender differences in both samples, however, are not great, reflecting diminished gender inequities in university attendance in North America over the post-war period (Jacobs, 1996). There is a difference in university attendance between the two marital status groups, with single respondents being more highly represented at university for the 4-year sample (38% of single versus 19% of married, common-law or divorced attended university). This trend is slightly less pronounced for the 7-year group where 47% of single, compared to 31% married, respondents attended university. For both samples, respondents from visible minority backgrounds are slightly less likely to attend university.

The four measures of socioeconomic status generally back the claim that respondents from a higher socioeconomic background are more likely to attend university (Davies and Guppy, 1997), supporting the need to control for SES variables in the multivariate analyses. In the 4-year sample, those youth who have experienced labour market difficulties, particularly those who were

TABLE 6.2
UNIVERSITY ATTENDENCE BY KEY SAMPLE CHARACTERISTICS AND SAMPLE

Educational Attainment

Sample Charact.	*4-year sample* Total	Univ	No 1-3 Yrs	4Yrs	*7-year sample* Total	Univ	No 1-3 Yrs	4Yrs
TOTAL	100.0 (836)	65.7 (549)	25.0 (209)	9.3 (78)	100.0 (404)	60.0 (242)	14.7 (60)	25.3 (102)
Gender								
Female	100.0	62.8	24.9	12.3	100.0	61.3	14.0	24.7
Male	100.0	67.9	25.1	7.0	100.0	58.8	15.3	26.0
Marital Status								
Single	100.0	62.1	27.7	10.2	100.0	52.6	15.4	31.8
Other	100.0	81.5	12.8	5.7	100.0	69.3	13.7	17.0
Parent(s) a Visible Minority								
Yes	100.0	66.7	24.3	9.0	100.0	60.9	14.2	24.9
No	100.0	59.1	29.7	11.2	100.0	53.8	17.4	28.8
Total Months Unemployed								
None	100.0	61.6	28.4	10.0	100.0	60.4	11.7	27.8
1-6 Mths	100.0	65.9	23.2	10.8	100.0	55.8	13.4	30.8
6 Mths +	100.0	82.7	15.4	1.9	100.0	64.8	20.9	14.3
Parent's Financial Situation[1]								
Below Aver.	100.0	71.8	20.5	7.7	100.0	64.9	18.9	16.2
Average	100.0	73.6	20.5	6.0	100.0	67.3	12.7	20.0
Above Aver.	100.0	51.5	33.9	14.6	100.0	49.4	16.5	34.1

[1]This is a self-reported measure where students were asked to locate their parent's financial situation on a 5-point scaling ranging from poverty level to wealthy. This variable was collapsed to 3 categories by merging the two end-point items.

Table 6.2
University Attendance by Key Sample Characteristics And Sample (Cont'd)

	Educational Attainment							
	4 year sample				*7-year sample*			
Sample Charact.	Total	Univ	No 1-3 Yrs	4Yrs	Total	Univ	No 1-3 Yrs	4Yrs
TOTAL	100.0 (836)	65.7 (549)	25.0 (209)	9.3 (78)	100.0 (404)	60.0 (242)	14.7 (60)	25.3 (102)
Father's Education								
< H.S.	100.0	76.0	17.1	6.9	100.0	69.7	14.0	16.3
H.S.	100.0	67.9	26.8	5.3	100.0	64.1	14.1	21.9
Some P.S.	100.0	61.9	28.0	10.1	100.0	63.7	16.9	19.4
Univ. Grad	100.0	34.2	43.5	22.3	100.0	31.9	16.2	51.9
Mother's Education								
< H.S.	100.0	72.9	21.5	5.6	100.0	67.9	18.3	13.7
H.S.	100.0	68.3	22.6	9.1	100.0	69.4	12.6	18.0
Some P.S.	100.0	59.1	29.6	11.3	100.0	50.0	12.9	37.1
Univ. Grad	100.0	25.2	49.5	25.2	100.0	22.8	14.0	63.2

unemployed for at least 6 months, are also less likely to attend university. However, this trend is not nearly as strong for the 7-year sample where unemployment experience appears to have little or no relationship with attending university. In fact, those who had been unemployed for 1 to 6 months were slightly more likely to attend university than those who had experienced no unemployment (44.2% compared to 39.5%). This may be because the longer data set covered the recession of 1990-1992 where respondents were exposed to a less stable labour market and were more likely to experience unemployment. Thus, when faced with the prospect of being unemployed, attending university may be viewed as a more attractive alternative. Nevertheless, it is difficult to determine if unemployment is a cause or an effect of university attendance. It may be that those who choose not to participate in university were more likely to be in the labour market and consequently more likely to experience unemployment. Conversely, unemployment can also be viewed as a measure of SES background. As "parent's financial situation" suggests, lower SES respondents are less likely to attend university. University attendance is much more common among those respondents from an "above average" economic background where about half have attended university for both samples. Finally, mother's and father's education level are related to university attendance for both samples. Again, university attendance is the most prevalent among those respondents whose parents were university graduates. For example, almost three quarters of respondents whose mother had a university degree attended university themselves.

TRI-VARIATE RESULTS: ATTITUDE CHANGE BY AMOUNT OF UNIVERSITY EDUCATION

Having presented the relationship between respondent characteristics and educational attainment, the remainder of the chapter will focus on the key question of whether or not university education has an effect on attitudes. Does university attendance change attitudes at all, and if so, do students become more liberal and tolerant as enlightenment theory suggests or more conservative as reproduction theorists argue?

To begin with, crosstabular results will be presented and discussed with an eye to assessing the differences in attitude change between university and non-university respondents. The data will also allow the detection of a selectivity bias—that is whether the Time 1 (1985) attitudes of respondents who subsequently attend university can be distinguished from those who do not attend university. The results for the 4-year sample will be examined first, followed by the 7-year results, and the section will then conclude with a comparison of the two sets of results.

The following two tables present attitudes broken down by amount of university education for the 4-year and 7-year samples separately. All of the dependent variables were coded so that higher values represent more liberal attitudes. The first set of three columns in Table 6.3 shows the responses for the total sample in each year and the percent of change across time. The second, third and fourth sets of columns break down the pattern by amount of university education acquired.

4-Year, Tri-city Results

By examining the total sample responses (the first three columns in Table 6.3), we can see that attitudes are fairly stable over time with most categories changing by less than 10% (third column)[2]. For example, there was only a 7.2% change in attitudes towards immigrants taking jobs between 1985 and 1989. The change that did occur, however, suggests that sample members have become slightly less liberal in their views[3]. This trend is particularly noticeable for the General Social Problem Index where, in 1989 compared to 1985, 13% fewer respondents believed that racial and Native Canadian discrimination, job discrimination against women, poverty and unemployment were serious social problems. Similarly, decreases in liberal attitudes were seen for the immigrants taking jobs item, as well as the treatment of Native Canadians and female job discrimination items.

The noticeable decrease in liberal attitudes for most of the items stands in contrast to the many studies that have reported an increase in liberal and tolerant attitudes among North Americans in the last 40 years (see Rokeach and Ball-Rokeach, 1989). Thus, on the one hand these findings are surprising. Yet, at the same time these findings mirror a noticeable shift towards more conservative social, economic and political attitudes that has emerged in the 1980s. As exemplified by the support for Margaret Thatcher, Ronald Reagan, and finally, Brian Mulroney as Western political leaders, we have seen a definite overall movement to the right that constitutes a reversal of the more liberal days of the 1960s and early 1970s. The results from this analysis suggest that the 'new right' political agenda has also had an effect on how these young sample members view minority groups.

TABLE 6.3
DISTRIBUTION OF ATTITUDES[1] BY TIME PERIOD AND EDUCATION
4-year sample

ENLIGHTENMENT THEORY MEASURES:	Total (837) 1985	1989	% Chnge	Education: No Univ. (550) 1985	1989	% Chnge	1-3 Yrs (209) 1985	1989	% Chnge	4Yrs (78) 1985	1989	% Chnge
General Social Problem Index												
No Problem	1.8	5.8	4.0	1.3	6.5	5.2	3.0	4.5	1.5	2.1	4.3	2.2
Neutral	32.2	41.5	9.3	31.2	41.1	9.9	32.9	44.1	11.2	37.7	37.1	0.6
Problem	66.0	52.7	- 13.3	67.5	52.4	-15.1	64.1	51.4	-12.7	60.2	58.7	-1.5
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Immigrant Taking Jobs												
Agree	34.1	37.4	3.3	39.6	44.5	4.9	23.5	25.0	1.5	25.1	20.5	- 4.6
Neutral	28.0	31.9	3.9	28.0	32.4	4.4	30.0	30.0	0.0	23.0	33.5	10.5
Disagree	37.9	30.7	- 7.2	32.4	23.1	- 9.3	46.6	45.1	- 1.5	51.9	46.0	- 5.9
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Racial Discrim.												
Disagree	19.7	13.9	- 5.8	19.0	14.2	- 4.8	19.9	13.3	- 6.6	24.1	13.4	- 10.7
Neutral	31.9	37.8	5.9	31.6	39.6	8.0	33.2	36.8	3.6	30.1	28.0	- 2.1
Agree	48.4	48.3	- 0.1	49.5	46.3	- 3.2	46.9	49.9	3.0	45.8	58.6	12.8
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

[1] All attitude variables are coded so that the bottom category in gray highlights represents the most liberal attitude.

TABLE 6.3 (Cont'd)

ENLIGHTENMENT THEORY MEASURES:	Total (837) 1985	1989	% Chnge	Education: No Univ. (550) 1985	1989	% Chnge	1-3 Yrs (209) 1985	1989	% Chnge	4Yrs (78) 1985	1989	% Chnge
Treatment of Native Canadians												
Disagree	13.6	16.5	2.9	11.7	18.8	7.1	16.3	14.4	- 1.9	19.5	7.8	-11.7
Neutral	34.4	34.1	- 0.3	36.6	35.3	- 1.3	31.1	30.8	- 0.3	28.6	33.8	5.2
Agree	52.0	49.4	- 2.6	51.7	45.9	- 5.8	52.6	54.8	2.2	52.0	58.5	6.5
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Female Job Discrimination a Problem												
Disagree	17.6	17.6	0.0	16.3	19.3	3.0	20.3	14.2	- 6.1	19.7	14.9	- 4.8
Neutral	34.5	36.7	2.2	35.4	38.4	3.0	32.6	34.3	1.7	33.2	31.0	- 2.2
Agree	47.9	45.7	- 2.2	48.4	42.4	- 6.0	47.1	51.5	4.4	47.0	54.0	7.0
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Husband Main Income Earner												
Agree	20.9	15.8	- 5.1	23.3	18.3	5.0	14.4	10.8	- 3.6	22.2	11.1	- 11.1
Neutral	22.3	18.9	- 3.4	21.7	21.0	- 0.7	23.6	16.5	- 7.1	22.4	10.6	- 11.8
Disagree	56.8	65.3	8.5	55.0	60.7	5.7	62.0	72.7	10.7	55.4	78.3	22.9
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

TABLE 6.3 (Cont'd)

REPRODUCTION THEORY MEASURES:	Total (837) 1985	1989	% Chnge	Education: No Univ. (550) 1985	1989	% Chnge	1-3 Yrs (209) 1985	1989	% Chnge	4Yrs (78) 1985	1989	% Chnge
Individual Explanations Index												
Agree	34.0	49.3	15.3	33.6	50.1	16.5	36.0	49.5	13.5	32.0	43.0	11.0
Neutral	38.6	33.4	- 5.2	39.1	34.4	- 4.7	36.9	29.7	- 7.2	39.9	36.9	- 3.0
Disagree	27.3	17.2	- 10.1	27.3	15.5	-11.8	27.1	20.8	- 6.3	28.2	20.2	- 8.0
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Structural Policies Index												
Disagree	10.9	15.5	4.6	8.3	12.2	3.9	16.7	23.1	6.4	13.6	18.5	4.9
Neutral	50.4	36.5	- 13.9	50.4	36.2	- 14.2	50.5	36.8	- 13.7	50.0	37.7	- 12.3
Agree	38.7	48.0	9.3	41.4	51.6	10.2	32.8	40.1	7.3	36.5	43.9	7.4
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

With regard to the reproduction measures, we also find that more respondents (15.3%) favoured individual solutions to inequality at the end of the 5-year time span than they did in the first year of the survey, thus exhibiting a more conservative position on inequality. On the structural policies measure, however, movement was seen out of the neutral category in both attitudinal directions. That is, some of the respondents who were neutral in their position towards structural policies to reduce inequality in 1985 became more conservative (4.6% change) while others became more liberal (9.3% change) in 1989. This finding hints at an intensification of attitudes such that respondents exhibited stronger views towards economic inequality (either supportive of or in disagreement with structural policies) over time. More importantly, however, when looking at both reproduction measures it appears as if respondents, as a group, became both more liberal and conservative as indicated by their increased likelihood to agree with individual explanations and structural policies.

In an attempt to determine the extent to which the same young people were supporting both individual explanations and structural policies to reduce inequality, a crosstabular analysis was run between these two dependent variables for both time periods. Results (not displayed) revealed that many respondents supported both these positions on inequality: almost half (47%) of the 1985 respondents and 37% in 1989 who adopted an individual stance towards inequality also favoured structural policies to reduce inequality in 1989. While this simple analysis does not tell us explicitly if the change towards more conservative attitudes on the individual index and more liberal attitudes on the structural index occurred among the same individuals it does provide some evidence that this may be the case. It is interesting, nonetheless, that many of the same respondents were supportive of both individual explanations and

structural policies to reduce inequality. In terms of reproduction theory, these findings force us to question the proposition that structural and individual explanations of inequality are diametrically opposing views. Rather, any one individual's attitudes may be more complex than reproduction theory maintains. Canadians might see both individual and structural barriers to equality. They might believe that individuals are responsible for their own economic destiny, but that there are also structural factors, such as corporations having too much power and high income earners not paying their share of taxes, that generate too much inequality. Clearly, the two distinct attitudinal domains emerging from the factor analysis discussed in Chapter 4 support this claim. This suggests that the assumption of reproduction theory that we can distinguish between people's social and economic values on the basis of their explanations for inequality may require some rethinking. These results do not necessarily mean that this assumption is invalid since not all respondents who favoured individual solutions also favoured structural explanations (i.e., if 50% favoured both, 50% did not). Moreover, differences in responses by education level as well as the results of the multivariate analyses need to be examined before this can be concluded more definitively. Lastly, these findings may also simply reflect measurement problems for the two indices.

The remaining sections of Table 6.3 present the change in attitudes between the two time periods across education levels. Before examining the differences in attitude change across educational groups, the presence of a selectivity bias will be determined by comparing the percentage breakdowns of attitudes between education levels for 1985. This comparison addresses the question of whether or not the respondents who attended university differed from those who did not on a liberal/conservative scale before attending university. By

determining if these groups were significantly different in their attitudes in 1985, we can assess the extent to which the results of prior cross-sectional studies (where pre-university attitudes were not entered into the model) may be misleading. As discussed in Chapter 3, much research has found support for enlightenment theory and to a lesser extent, reproduction theory. Yet, without incorporating into the analysis respondents' attitudes before they attend university, these studies are not able to measure a change in attitudes. In contrast, the panel data used in this research permit the detection of a selectivity bias, and provide a way of controlling for this bias in the multivariate analysis.

The "Immigrants Taking Jobs" measure is the only item that illustrates a strong selectivity bias whereby those who attend university were more liberal before their educational exposure. Whereas only 32.4% of the "No University" group disagreed with this statement in 1985, over half (51.9%) of those who eventually obtained 4 years of university disagreed. Conversely, there is a selectivity bias for the General Social Problems Index, but it is in the opposite direction than we might predict. More of those sample members who did not attend university were likely to appear liberal on this dimension in 1985, compared to those who did attend university. Overall, while inconsistent and not strong, the differences between the educational groups in 1985 highlight the importance of controlling for baseline values of the dependent variables in the regression analysis of attitudes in 1989.

Finally, by comparing the change across time in the distribution of attitudes for the three categories of education we can get a preliminary indication of the effects of education on attitudes. Generally, these data support the contention of enlightenment theory that higher education leads to more liberal attitudes. For example, despite the evidence that those respondents who did not

further their education were more likely to agree that various issues presented a serious social problem in 1985 (General Social Problems Index), they moved further down the liberal/conservative continuum over time than did the university-attending groups. The biggest difference in attitudes between the educational groups is for the immigrant question where two times as many respondents with university than without university disagreed (in 1989) that immigrants are taking jobs from Canadians (23.1%, 45.1% and 46.0% for the three educational groups respectively). Recall, however, that this item was the only one where a selectivity bias was detected such that more of those who attended university disagreed with this statement in 1985. Nevertheless, within the context of an overall reduction in liberal attitudes for this item, university educated respondents were less likely than the non-university group to exhibit such a negative change. Whereas 9.3% fewer respondents in the non-university group disagreed with this statement in 1989 than in 1985, 1.5% fewer of the 1-3 year university and 5.9% fewer of the 4-year university groups did not feel that immigrants were taking jobs. Thus, even after considering the effects of a selectivity bias, university education appears to act as a buffer against an overall wave of conservatism (at least with respect to immigrants).

The liberalizing effects of education also appear to be linear for many of the attitudinal items. Looking at the General Social Problem Index, compared to 1985, approximately 15% fewer of the non-university group saw racial and Native Canadian discrimination, job discrimination against women, poverty and unemployment as serious social problems in 1989, while almost 13% of those with 1-3 years of university and only 1.5% of those with 4 years of university became less liberal in their attitudes towards these general social problems. This pattern is similar for the other four enlightenment model items. The largest

and most continuous increase in liberal attitudes is exhibited for the item stating that a husband should be the main income earner in the family. Here the change in attitudes (between 1985 and 1989) doubles between each educational group (5.7% for the non-university group, compared to 10.7% in the 1-3 year university group, and 22.9% in the 4 year university group). Since there was no selectivity bias for this item (i.e., there was little difference in attitudes in 1985 between all three educational groups), changes in response to this attitudinal statement represent the strongest liberalizing effect of education. However, the other measure of gender role attitudes also reveals the same pattern of change with a decline in the proportion of those who did not attend university agreeing that female job discrimination is a problem (-6.0%) compared to an increase among those with 1-3 years of university (4.4%) and in the 4 year group (7.0%).

Three important conclusions can be drawn from the data presented in Table 6.3. First, university education appears to act as a buffer within the context of an overall shift towards more conservative attitudes among all sample members. For 5 of the 6 enlightenment measures, all respondents became more conservative. Although this same pattern is found for those who did not attend university, it is reduced and in some instances reversed for the university-educated groups.

Second, for some types of attitudes the liberalizing effects of education may not be linear, as indicated by the percentage increase in liberal attitudes between the 1 to 3 year- and the 4 year education groups. For example, almost two times as many respondents from the 1-3 year education group expressed more liberal views regarding a husband being the main family income earner, compared to the no-university group (5.7% compared to 10.7%). In turn, 22.9%

of the 4-year group became more liberal. These findings indicate that the relationship might be curvilinear.

A third conclusion is that education has the strongest liberalizing effect on attitudes towards gender roles and issues. This is an important finding in light of the scarcity of research done to date on this issue. This finding, however, will be put to a slightly different test for the 7-year data where the female job discrimination item is replaced with another measure of gender role attitudes.

As mentioned in the Methods Chapter, the test for reproduction theory rests primarily on patterns of change in responses to the questions about individual and structural policies to reduce inequality. Support for reproduction theory would be found if the university-educated respondents become more supportive of individual than structural explanations for inequality. The results in Table 6.3, however, are mixed: Compared to those who did not attend the university, those who did are less likely to move towards both individual and structural explanations for inequality across the 4-year time span. Also, the differences between the two university-educated groups of respondents do not reflect the continuous and progressive impact of university experience that was detected for the enlightenment measures. At this point, it is difficult to interpret these findings, but tentatively it might be concluded that these data do not support the contention of reproduction theory that university reproduces inequality by fostering conservative attitudes. Nevertheless, results for the longer 7-year data may shed some light on these seemingly unclear findings.

7-Year, Single-City Results

Table 6.4 presents the percentage breakdowns of attitudes in 1985 and 1992 by education level for the 7-year Edmonton sample. As already mentioned, although there are fewer dependent variables for this sample, since it covers a longer time span the effects of education should be clearer than for the 4-year sample, particularly for those attending university for 4 years or more.

In contrast to the findings for the 4-year sample in Table 6.3 where it was found that, as a group, the sample became more conservative over the 4-year period, on average, respondents in the 7-year data set exhibit an increase in liberal attitudes. This is particularly noticeable for attitudes towards a husband being the main income earner, where 17.3% more sample members disagreed with this statement in 1992 compared to 1985.

The differences in the direction of attitude change between the two samples (Table 6.3 compare with Table 6.4) cannot be explained with reference to differences in the prevailing economic conditions in 1989 and 1992. The 4-year sample was surveyed prior to the beginning of an economic recession (1989) whereas the 7-year sample was surveyed in 1992 during a long recession. If economic conditions were responsible for the differences, we would predict that the 7-year sample would be more conservative in 1992 since these respondents would have just experienced 3 years of economic downturn. In contrast, the attitudes of the 4-year sample members were measured in 1989 and would not yet have been influenced by the recession. But the findings do not reflect this scenario.

Two alternative explanations remain. First, the longer sample only includes Edmonton respondents whereas the 4-year sample adds respondents from Toronto and Sudbury. Thus, the differences in direction of attitude change

may reflect regional differences in attitude change. However, since Time 1 (1985) responses to the two attitudinal measures that are included in both samples (immigrants taking jobs and husband being the main income earner) are very similar, we can conclude that the differences between the two samples emerged some time after 1989. This means that the sample differences may be attributable to the greater maturation among 7-year sample respondents. In other words, sample members in the longer data set became more liberal simply because they were older or acquired more education.

The findings from the 4-year data set (Table 6.3) showing that an increasing number of respondents agreed with individual explanations for inequality are also found for the longer data set (18.6% more respondents responded conservatively in 1992 than in 1985). Similarly, the pattern of some respondents becoming more liberal and others more conservative on the structural index that was found for the 4-year data is also evident in Table 6.4. Again, these findings suggest that the assumption of reproduction theory that we can distinguish between people's social and economic values on the basis of their explanations for inequality may require some rethinking.

Looking at the changes in attitudes across levels of education, again, the data provide fairly strong support for enlightenment theory. For the gender role items, all respondents became more liberal, and increasingly so as education level increased. Respondents attending university for at least 4 years appear to be strongly affected by their educational experience. For example, by 1992 about one-third of the 4-year+ group changed their response from 1985, now disagreeing that a husband should be the main family income earner. The breakdowns for the immigration question support the enlightening effects of later university experience (4 years) but, interestingly, the liberalizing effects are not

apparent for the 1-3 year group. Also, it is important to note the selectivity bias for this item: respondents who subsequently attend university are quite a bit more likely to disagree with this statement in 1985 than those who did not attend university.

Reviewing the results for university-educated respondents in both samples, it appears that education has a slightly weaker liberalizing effect for the first couple of years than for the latter years. For example, for both samples, students with 4 or more years of university became significantly more liberal in their attitudes towards a husband being the main income earner than did those with less than 4 years of university. This finding might indicate that four-year programs and graduate courses have a stronger impact on attitudes. Alternatively, one might argue that there is a selectivity bias among university students such that those who acquire more years of education are already more liberal before they pursue higher education than those students who attend for only a couple of years and then drop out. However, a review of the differences in attitudes at T1 between the 1-3 year and 4 year plus groups does not support this alternative explanation (Table 6.4). In fact, in some cases, the selectivity bias is in the opposite direction. For example, for the question about whether a husband should be the main income earner, 66.8% of the 1-3 year group compared to only 49.5% of the 4 years and more group disagreed with this statement in 1985, indicating a more liberal response at the outset for the less educated group.

TABLE 6.4
DISTRIBUTION OF ATTITUDES[1] BY TIME PERIOD AND EDUCATION
7-year sample

ENLIGHTENMENT THEORY MEASURES:	Total (404) 1985	1992	% Chnge	Education: No Univ. (242) 1985	1992	% Chnge	1-3 Yrs (59) 1985	1992	% Chnge	4Yrs+ (103) 1985	1992	% Chnge
Immigrants Taking Jobs												
Agree	34.7	33.0	- 1.7	40.7	43.7	3.0	26.3	19.8	- 6.5	25.6	15.4	-10.2
Neutral	29.2	31.2	2.0	31.3	30.8	- 0.5	27.1	40.1	13.0	25.7	26.4	0.7
Disagree	36.1	35.8	0.3	28.0	25.5	- 2.5	46.7	40.2	- 6.5	48.7	58.2	9.5
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Husband Main Income Earner												
Agree	21.2	14.1	- 7.1	24.4	19.0	- 5.4	12.0	3.5	- 8.5	19.1	8.8	-10.3
Neutral	24.6	14.4	-10.2	22.5	17.0	- 5.5	21.2	10.4	-10.7	31.4	10.5	- 20.9
Disagree	54.2	71.5	17.3	53.1	64.0	10.9	66.8	86.0	19.2	49.5	80.7	31.2
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Wife Mainly Responsible for Raising Children												
Agree	9.8	6.6	- 3.2	11.0	8.0	- 3.0	3.9	3.9	0.0	9.5	2.8	6.7
Neutral	20.7	17.3	- 3.4	21.0	20.8	- 0.2	22.1	12.9	- 9.2	18.1	5.1	- 13.0
Disagree	69.5	76.1	6.6	67.9	71.3	3.4	74.0	83.2	9.2	72.3	92.0	19.7
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

[1] All attitude variables are coded so that the bottom category in gray highlights represents the most liberal attitude.

TABLE 6.4 (Cont'd)

REPRODUCTION THEORY MEASURES:	Total (404)		%	Education: No Univ. (242)		%	1-3 Yrs (59)		%	4Yrs+ (103)		%
	1985	1992	Chnge	1985	1992	Chnge	1985	1992	Chnge	1985	1992	Chnge
Individual Explanations Index												
Agree	30.1	48.7	18.6	27.2	48.2	21.0	41.5	48.8	7.3	30.3	50.0	19.9
Neutral	39.5	35.1	- 4.4	42.4	36.3	- 6.1	26.5	33.7	6.6	40.5	33.5	- 7.0
Disagree	30.4	16.2	- 14.2	30.5	15.6	-14.9	32.0	18.1	-13.9	29.3	16.6	- 12.7
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Structural Policies Index												
Disagree	10.1	15.4	5.3	7.2	10.5	3.3	9.1	23.2	14.1	17.5	22.8	5.3
Neutral	54.0	38.2	-15.8	55.4	39.5	-15.9	63.5	41.2	-22.3	45.3	32.8	-12.5
Agree	35.9	46.4	10.5	37.3	49.9	12.6	27.4	35.6	8.2	37.2	44.5	7.3
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

The two items testing reproduction theory do not support the contention that higher education leads to more individualistic and conservative attitudes. Like the results from Table 6.3, the percentage breakdowns for the two indices in Table 6.4 do not appear to follow the predicted pattern. Over time, all three educational groups became more individualistic and were also more likely to adopt structural explanations for inequality. In fact, comparing all three educational groups, respondents with no university changed the most over the 7 years, becoming more liberal on the structural policies index (12.6% more respondents were liberal in 1992 compared to 1985). Since the results from Table 6.3 are also contradictory, at this stage of the analysis it can be preliminarily concluded that reproduction theory is not supported by these data. Although students became more liberal for the enlightenment measures of attitudes towards racial minorities, gender roles and social issues, they were no more likely to opt for individual as opposed to structural explanations of inequality.

It is important to understand, however, that these conclusions are tentative since there may be several additional variables not accounted for in these analyses (e.g., gender and socioeconomic status). Also, the limited variation in the measures of education and attitudes (both collapsed into three categories) may be concealing more subtle differences in attitude change. Additionally, as will be explored in the following chapter, there may be differences in attitude change by program of study that are concealed with this broad analysis that does not distinguish between different types of university education. Nevertheless, these findings do support the contention of enlightenment theory that university fosters a more liberal and tolerant populous. Also, these data suggest that the effects of university education may not be

linearly related to attitude change, particularly after the 4-year mark. This possibility will be explored in the following chapter.

MULTIVARIATE REGRESSION RESULTS

Preliminary Methodological Notes:

The above crosstabular analyses provide some valuable insights not only in terms of the relative explanatory power of the two theories but also about the benefits of using panel as opposed to cross-sectional data. Since we have longitudinal data we can detect selectivity biases and, accordingly, can see more clearly the strength and direction of attitude change as a result of university exposure. While the crosstabs allow the detection of some patterns in the data that may not be as clear in correlational-type analysis, the following multivariate regression analyses permit a more definitive test of the tentative conclusions drawn from the crosstabs. In particular, these statistical models provide a more concrete and reliable test of each theory by incorporating the effects of any selectivity bias as well as by controlling on several other possible influential variables.

The effects of weighting (to address sample attrition discussed in the previous chapter) were determined by comparing the coefficients for the unweighted and weighted models. The comparison of the two models are presented in Appendix C. Recall that attrition analyses suggested that the sample be weighted since females and academically-oriented respondents were more likely to remain in the study for the full duration. Comparisons of the weighted and unweighted results suggest that weighting has a very slight effect on some attitude measures, but is negligible for most. The biggest difference between the weighted and unweighted models can be detected in those analyses where education is significantly related to attitudes. Therefore, in the interest of erring on the conservative side, the following analysis used data weighted on the basis of sex and academic program.

In an attempt to assess the external validity of the models being tested, all models were examined separately for each of the three cities for the 4-year data set (Edmonton, Toronto and Sudbury). In these analyses, the analysis for each city is viewed as a replication of the model and as such the results can be used to assess external validity. If the results (i.e., the coefficients for education) are similar across cities, then we can conclude greater generalizability of the results. While there were some differences found across the cities in terms of the effects of education, the general conclusions remained the same. However, it is difficult to interpret the source of these differences since it is impossible to choose between two competing explanations. First, if we view the separate analyses for the three cities as a test of the external validity of the overall model, then the results are not generalizable if there are significant differences between the cities. Alternatively, it is possible that respondents in one city may have been exposed to unique, but unmeasured, conditions or experiences compared to respondents in another city. However, there is no statistical, theoretical or even common-sense basis for discerning whether or not the variable findings represent limited generalizability or are due to real differences in either the educational institutions or, more generally, the social, political and economic climate prevailing in each location. But since there were only slight differences found, and because the general conclusions remained the same for each city, it is reasonable to conclude that the relationship between education and attitude change is largely consistent across locales. To account for the minor differences, however, 'city' was included as a control variable in all the following models. Since there are three cities, two binary variables were constructed with Sudbury as the reference category.

Basic Findings:

The multivariate regression results for the full model are presented for each attitude measure for both the 4-year and 7-year samples. Estimates for the equations without the 1985 (T1) attitude measures are also presented to determine the effects of using panel as opposed to cross-sectional data. The results for the models testing enlightenment theory are presented first, followed by the models employing the two measures designed to test reproduction theory. Given that some of the dependent variables are not available for both samples, the results cannot be presented in a completely consistent manner. Every attempt was made, however, to present the results for those dependent variables that are common to each sample in the same table. In other cases, results from similar attitude domains (e.g., gender roles) are presented together.

Table 6.5 presents the results of the multivariate regression analysis with the index of attitudes towards general social problems (only available for the 4-year data set) as the dependent variable. The table presents the standardized (bold) and unstandardized (italics) regression coefficients for each independent variable for both the full basic model and the abbreviated model where the T1 attitudinal variable is omitted from the equation. Standardized coefficients (betas) will be discussed when interpreting the effects of a variable relative to another variable in the same model, and unstandardized coefficients will be used when making comparisons across models.

Looking first at the full model on the left, the coefficient for T1 attitudes (1985) is significant and strong (beta = .335), re-emphasizing the importance of controlling on attitudes in 1985. On average, sample members who were more positive (or negative) in their attitudes when first surveyed in 1985 remained so in

1989. The fact that this coefficient is not larger, however, indicates that attitudes have changed over the 4 years.

Years of university is significant at the .05 level, but the effect is not strong (beta = 0.083). Recall also that the dependent variable is highly skewed towards the "agree" (liberal) end of the scale indicating that it may not be a strong measure of the effects of education since it contains relatively little variation[4]. Nevertheless, these findings present some support for the liberalizing effects of attending university. We can state with some degree of confidence that respondents with university exposure are more likely to view racial discrimination, the treatment of native Canadians, job discrimination against women, poverty, and unemployment as serious social problems, controlling on a number of other important variables.

With the exception of gender and the city variables, none of the control measures appear to have any great impact on general social attitudes[5]. The magnitude and direction of the coefficient for the gender variable (beta = .113) suggests that females are more likely to view the list of social issues as problematic, net of all other control variables. Also, Toronto and Edmonton respondents exhibited more liberal attitudes than did respondents from Sudbury. Not too much should be made of these city differences since the results of separate analyses by city (discussed in the previous section on Preliminary Methodological Notes) showed that the differences across cities were not very strong.

TABLE 6.5
REGRESSION OF INDEX OF ATTITUDES TOWARDS GENERAL SOCIAL PROBLEMS ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES
4-year sample

Attitude	Estimate With T1 Attitude[1] (n = 724)	Estimate Without T1 (n = 741)
Attitudes in 1985	**.335***** *.351*	N/A *N/A*
University (years)	**.083*** *.036*	**.051** *.022*
Gender	**.113***** *.148*	**.177***** *.231*
Visible Minority Origins	**-.015** *-.030*	**-.033** *-.066*
Parent's Education	**-.014** *-.021*	**-.008** *-.012*
Parent's Finances	**-.003** *-.027*	**-.036** *-.023*
Months Unemployed	**.020** *.017*	**.025** *-.021*
Edmonton	**.110*** *.148*	**.129*** *.171*
Toronto	**.139**** *.211*	**.206***** *.307*
Adjusted R Square	.144***	.040***

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

Last, by comparing the education coefficients in the full model and in the model without T1 attitudes as a control variable, further support is given to our use of panel, as opposed to cross-sectional, data. One way of interpreting the differences in coefficients across models is to view the full model as a measure of the effects of education on a change in attitudes over time. Alternatively, the smaller model represents a static and therefore misspecified measure of the effects of university education. Since the education coefficient for the second model is insignificant but significant for the full model we can imagine a similar cross-sectional study erroneously concluding that education does not have a significant effect on attitudes. The results for the full model, however, more accurately suggest that education has a small effect on general social attitudes, controlling on attitudes at T1.

Table 6.6 presents the results for the dependent variable measuring respondents' views towards immigrants for both the 4- and 7-year samples. Five-point Likert responses ranging from "strongly agree" to "strongly disagree" to the statement "Too many immigrants have been getting jobs in Canada" were used as an indicator of attitudes towards immigrants specifically, and racial minorities generally. Marital status was added to the list of independent control variables for the 7-year sample on the grounds that this variable represents a major life course change and might influence the social and economic values of respondents. It was not included in the 4-year sample, however, since this group was several years younger in 1989 and very few were married by this point (18%) compared to the 7-year sample (43%).

TABLE 6.6
REGRESSION OF ATTITUDES TOWARDS IMMIGRANTS ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES

	4-year sample		7-year sample	
	With T1 Attitude[1] (n=720)	Without T1 Attitude (n=734)	With T1 Attitude (n=368)	Without T1 Attitude (n=369)
Attitudes in 1985	**.388*** **	**N/A**	**.360*** **	**N/A**
	.381	*N/A*	*.365*	*N/A*
University (years)	**.167*** **	**.223*** **	**.241*** **	**.305*** **
	.146	*.196*	*.147*	*.186*
Visible Minority Origins	**.164*** **	**.212*** **	**.112***	**.154****
	.658	*.859*	*.457*	*.636*
Gender (female=1)	**-.042**	**-.043**	**-.051**	**-.057**
	-.110	*-.111*	*-.131*	*-.149*
Parent's Education	**.027**	**.042**	**-.014**	**.000**
	.081	*.127*	*-.039*	*-.001*
Parent's Finances	**-.055**	**-.031**	**-.016**	**.002**
	-.104	*-.059*	*-.030*	*.004*
Months Unemployed	**-.026**	**-.040**	**.019**	**.034**
	-.045	*-.069*	*.025*	*.044*
Edmonton	**.018**	**-.010**	**N/A**	**N/A**
	.048	*-.026*		
Toronto	**.026**	**.044**	**N/A**	**N/A**
	.079	*.132*		
Marital Status (married = 1)	**N/A**	**N/A**	**-.062**	**-.095**
			-.162	-.249
Adjusted R Square	0.239***	0.099***	0.250***	.133***

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

Again, the estimate for T1 attitudes suggests that many of the sample members responded similarly in 1985 and 1989 (or 1992 for the 7-year sample). Years of university education is strongly and significantly related to attitudes towards immigrants (beta = .146 for the 4-year and .147 for the 7-year sample); the greater the number of years of university, the more tolerant the respondent. These results support enlightenment theory.

With the exception of visible minority origins, none of the other control variables are related to attitudes towards immigrants. As we would expect, however, visible minority origins is significantly related to more tolerant attitudes for both samples, although this effect is slightly stronger for the 4-year sample. Those respondents who have at least one visible minority parent are much more likely to disagree that immigrants are taking too many jobs, particularly for the 4-year sample.

In contrast to the results in Table 6.5, for both subsamples the inclusion of T1 attitudes reduces the effects of education on attitudes (as well as visible minority origins and gender). The difference in the estimates between the full model and the abbreviated model suggests that a cross-sectional analysis of the same attitudes would lead to the conclusion of a slightly stronger link between education and attitudes than the more accurate causal model shows. However, the overall conclusion of statistical significance does not differ between models. That is, in both cases we would conclude that university education has a liberalizing effect on attitudes towards immigrants and racial minorities.

Table 6.7 presents the results of the regression analyses for the two remaining measures of racial tolerance that are available only for the 4-year sample. These items measure the extent to which respondents felt that racial discrimination and the treatment of Native Canadians are serious social

problems. Both models are rather weak in explanatory power, accounting for only 8% and 9% of the variation in attitudes towards racial minorities and Native Canadians, respectively. Years of university education does not appear to be related to attitudes towards racial minorities but is significantly related to attitudes towards the treatment of Native Canadians. This is puzzling since presumably both dependent variables are measures of the extent to which respondents feel that racial discrimination is a problem. One possible explanation for this difference is that the treatment of Native Canadians is a more specific example of racial discrimination and, accordingly, is perhaps a better or more sensitive indicator of racial attitudes than the rather obvious alternative statement. For example, sample members may understand the "treatment" of Native Canadians to cover such specific issues as land claims and the placement of Native children into non-native schools and homes. The fact that university education has a significant effect on the immigration item (see Table 6.6), which also presents a very specific example of racial discrimination, supports this explanation.

TABLE 6.7
REGRESSION OF ATTITUDES TOWARDS RACIAL MINORITIES AND NATIVE CANADIANS ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES

	4-year sample			
	Racial Discrimination a Problem		Treatment of Native Canadians	
	With T1 Attitude[1] (n=733)	Without T1 Attitude (n=734)	With T1 Attitude (n=730)	Without T1 Attitude (n=741)
Attitudes in 1985	**.256*** **	**N/A**	**.256*** **	**N/A**
	.237	*N/A*	*.270*	*N/A*
University (years)	**.047**	**.018**	**.134*** **	**112** **
	.029	*.012*	*.100*	*.084*
Visible Minority Origins	**.000**	**.036**	**.040**	**.040**
	.000	*.077*	*.139*	*.137*
Gender (female=1)	**.020**	**.037**	**.039**	**.059**
	.037	*.068*	*.088*	*.131*
Parent's Education	**.047**	**.043**	**.008**	**.036**
	.099	*.092*	*.021*	*.094*
Parent's Finances	**-.013**	**- .016**	**.042**	**.033**
	-.018	*- .022*	*.069*	*.053*
Months Unemployed	**-.017**	**- .033**	**.027**	**.019**
	-.020	*- .040*	*.039*	*.028*
Edmonton	**.027**	**.045**	**.122***	**162** **
	.052	*.084*	*.278*	*.370*
Toronto	**.156** **	**.208*** **	**.191*** **	**.252*** **
	.332	*.439*	*.492*	*..644*
Adjusted R Square	0.085***	0.024***	0.096***	0.043*

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

Again, with the exception of the Toronto variable, none of the control variables are statistically significant. This is particularly baffling for the visible minority origins for the racial discrimination variable (beta = .000). However, this finding combined with the above explanation for the null findings for this model again suggests that this dependent variable is not a very sensitive measure of racial attitudes. As a result, the findings for this attitudinal variable will be interpreted with some caution and greater weight will be given to the two other measures of attitudes toward racial groups.

Table 6.8 presents the regression results for one of the dependent variables measuring attitudes towards gender roles for both samples. The item asks the respondents the extent to which they agree/disagree with the statement "A husband should be mainly responsible for earning the living". Again, 1985 attitudes explain much of the variation in the dependent variable, but not as strongly for the 7-year sample as for the 4-year sample (Betas of .348 and .202 respectively). Years of university is significant for the 4-year (Beta = .123) but not for the 7-year model (Beta = .103), although they are both in the same direction. Given the smaller sample size of the 7-year data, we should not make too much of these differences. Thus, we can conclude that both samples provide weak support for the enlightening effects of university. Additionally, since the 4-year model controls on city this difference cannot be because the 7-year sample contains only Edmonton respondents. Rather, this difference may be because the extra years covered in the 7-year sample case may have introduced other factors that could affect attitudes. Or, these findings might suggest that, for this

TABLE 6.8
REGRESSION OF ATTITUDES TOWARDS HUSBAND RESPONSIBLE FOR INCOME ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES

	4-year sample		7-year sample	
	With T1 Attitude[1] (n=740)	Without T1 Attitude (n=745)	With T1 Attitude (n=371)	Without T1 Attitude (n=371)
Attitudes in 1985	**.348*** ** *.320*	N/A	**.202*** ** *.190*	N/A
University (years)	**.123*** ** *.095*	**.135*** ** *.105*	**.103** *.053*	**.116*** *.061*
Gender (female=1)	**.130*** ** *.300*	**.161*** ** *.374*	**.006** *.014*	**.026** *.057*
Visible Minority Origins	**.009** *.030*	**.013** *.047*	**.008** *.027*	**.006** *.021*
Parent's Education	**-.040** *-.107*	**-.037** *-.099*	**.060** *.150*	**.053** *.133*
Parent's Finances	**.070*** *.118*	**.091*** *.154*	**.066** *.104*	**.058** *.091*
Months Unemployed	**-.013** *-.020*	**.016** *.024*	**.041** *.046*	**.050** *.055*
Edmonton	**-.012** *-.029*	**-.060** *-.141*	N/A	N/A
Toronto	**.150**** *.398*	**.135*** *.358*	N/A	N/A
Marital Status (married = 1)	N/A	N/A	**-.085** *-.191*	**-.102** *-.229*
Adjusted R Square	.190***	.070***	.070***	.033**

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

attitudinal item, university education leads to more liberal attitudes in the early years (e.g., 1 to 4 years), but subsequent education has little or no further liberalizing effect. Again, this hint of non-linearity re-emphasizes the need to more precisely determine the shape of the relationship between education and attitude change.

The next gender-role attitudinal item examined is the statement "A wife should be mainly responsible for raising children in a family". Similarly to the previous measure of attitudes towards gender roles (Table 6.8), results from Table 6.9 indicate that years of university is significantly, although not strongly, related to the dependent measure (Beta = .113).

It is also interesting that gender is not significantly related to this attitude measure. The negative and significant relationship between marital status and gender role attitudes suggests that married or common-law respondents are more likely to agree with the statement than non-married ones. That is, married respondents tend to hold less liberal attitudes towards gender roles than the other respondents. This might mean that it is easier for single respondents to express more liberal views without having experienced the exigencies of gender roles that are often more noticeable in relationships. Alternatively, married or common-law subjects may begin their relationship with similar views of gender roles but, when they are faced with the reality of having to divide their household labour, find themselves resorting to more traditional gender roles. In other words, single sample members may be drawing upon more abstract notions of gender equality than married respondents whose attitudes are based upon their lived experience.

The final analysis of gender issues (attitudes regarding female job discrimination) is presented in Table 6.10. Again, there is a significant and

positive relationship between years of university and attitudes: those respondents who attend university are more likely to view female job discrimination as a problem (Beta = .106), net of the effects of all other variables. As we would expect, women in the sample are also more likely to view female job discrimination as a problem.

In summary, analysis of the three items measuring attitudes towards gender roles supports enlightenment theory, that is, these attitudes are positively influenced by education. Compared to the strong findings in the crosstabs in Tables 6.3 and 6.4, however, these findings suggest a more modest relationship between university education and change in gender role attitudes. Since gender is significantly related to two of the three measures, it is likely that the difference between the bivariate and multivariate results can be attributed to the inclusion of gender in the latter analyses.

Last, the results of the analysis of the two measures representing the reproduction model are presented below in Tables 6.11 and 6.12. Looking first at the individual explanations for inequality index (Table 6.11), years of education is significantly related to attitudes in both data sets. Subjects with greater amounts of university education are more likely to reject individual explanations for inequality. For example, higher educated respondents are more likely to disagree that "poor people are poor because of their own lack of effort". On its own, the results for this item do not support the contention of reproduction theory that respondents who have attended university will show a greater attachment to the merits of individual effort as a determinant of one's economic position in society.

TABLE 6.9
REGRESSION OF ATTITUDES TOWARDS WIFE RESPONSIBLE FOR RAISING CHILDREN ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES
7-year sample

	With T1 Attitude[1] (n=371)	Without T1 Attitude (n=371)
Attitudes in 1985	**.313*** ***.293***	**N/A**
University (years)	**.113**** ***.059***	**.129*** ***.067***
Gender (female=1)	**.088** ***.171***	**.119*** ***.231***
Visible Minority Origins	**.052** ***.162***	**.055** ***.169***
Parent's Education	**.041** ***.090***	**.050** ***.110***
Parent's Finances	**.013** ***.018***	**-.008** ***-.012***
Months Unemployed	**.085** ***.083***	**.072** ***.071***
Marital Status (married=1)	**-.121*** ***-.238***	**-.127*** ***-.249***
Adjusted R Square	.150***	.054***

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics

TABLE 6.10
REGRESSION OF ATTITUDES TOWARDS FEMALE JOB DISCRIMINATION A PROBLEM ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES
4-year sample

	With T1 Attitude[1] (n=371)	Without T1 Attitude (n=371)
Attitudes in 1985	**.279*** ***.278***	**N/A**
University (years)	**.106**** ***.068***	**.087*** ***.056***
Gender (female=1)	**.173***** ***.333***	**.220***** ***.421***
Visible Minority Origins	**.001** ***.002***	**.011** ***.031***
Parent's Education	**-.023** ***-.050***	**-.029** ***-.063***
Parent's Finances	**.003** ***.004***	**.010** ***.013***
Months Unemployed	**.018** ***.023***	**.005** ***.006***
Edmonton	**.082** ***.162***	**.052** ***.102***
Toronto	**.121*** ***.270***	**.146*** ***.321***
Adjusted R Square	.127***	.056***

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

The inclusion of the T1 attitude does not alter the effects of education to any significant degree. It is also worth noting that the control variable of labour market difficulties (total months unemployed) is significantly and quite strongly related to attitudes, particularly for the longer, 7-year sample: the greater the number of months unemployed, the more likely that an individual will reject individual explanations for inequality. This is the first model where months unemployed has been related to attitudes, suggesting that this index is directly affected by labour market experiences. However, this finding is not surprising as the content of one of the three statements comprising this index directly relates to being unemployed ("Youth unemployment in Canada is high because it is too easy to get welfare and unemployment insurance"). Thus, controlling on university education, respondents who have experienced unemployment tend to generalize their personal experience to this broader statement about the reasons why unemployment is high.

Table 6.12 presents the regression results for the structural policies to reduce inequality index. The small and insignificant coefficients for education for both data sets suggest that university education has almost no effect on the extent to which respondents accept structural policies to reduce inequality, although the parameter estimates are in the direction that would support reproduction theory. Thus, it can be concluded that these findings, in combination with the results from Table 6.11, do not support reproduction theory, at least as operationalized by the measures used in this study. First, the positive and significant education coefficient for the individual explanations index contradicts the contention of reproduction theory that university-educated respondents would exhibit a stronger attachment to individual explanations for

TABLE 6.11
REGRESSION OF INDIVIDUAL EXPLANATIONS FOR INEQUALITY INDEX ON YEARS OF EDUCATION AND CONTROL VARIABLES

	4-year sample		7-year sample	
	With T1 Attitude[1] (n=740)	Without T1 Attitude (n=745)	With T1 Attitude (n=371)	Without T1 Attitude (n=371)
Attitudes in 1985	**.399*** ** *.397*	N/A	**.282*** ** *.275*	N/A
University (years)	**.097** ** *.058*	**.123** ** *.074*	**.122** * *.051*	**.124** ** *.053*
Gender (female=1)	**.029** *.053*	**.056** *.010*	**.096** * *.170*	**.124** ** *.218*
Visible Minority Origins	**.018** *.051*	**.019** *.053*	**.004** *.012*	**-.010** *-.029*
Parent's Education	**-.008** *-.017*	**- .008** *- .016*	**-.023** *-.012*	**-.176** *-.019*
Parent's Finances	**-.043** *-.057*	**- .082*** *- .108*	**-.027** *-.034*	**-.059** *-.073*
Months Unemployed	**.076*** *.089*	**.083*** *.096*	**.203*** ** *.181*	**210*** ** *.187*
Edmonton	**.068** *.125*	**.133** ** *.245*	N/A	N/A
Toronto	**.090** *.189*	**.133*** *.275*	N/A	N/A
Marital Status (married=1)	N/A	N/A	**-.076** *-.136*	**- .116*** *- .207*
Adjusted R Square	.179***	.024***	.147***	072***

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

TABLE 6.12

REGRESSION OF STRUCTURAL POLICIES TO REDUCE INEQUALITY INDEX ON YEARS OF UNIVERSITY EDUCATION AND CONTROL VARIABLES

	4-year sample		7-year sample	
	With T1 Attitude[1] (n=740)	Without T1 Attitude (n=745)	With T1 Attitude (n=371)	Without T1 Attitude (n=371)
Attitudes in 1985	**.389*** ** *.380*	**N/A**	**.410*** ** *.423*	**N/A**
University (years)	**-.027** *-.017*	**-.040** *-.024*	**-.067** *-.028*	**-.059** *-.025*
Gender (female=1)	**-.017** *-.032*	**-.035** *-.065*	**.051** *.089*	**.004** *.079*
Visible Minority Origins	**-.059** *-.168*	**-.090*** *-.254*	**-.026** *-.074*	**-.061** *-.171*
Parent's Education	**-.015** *-.032*	**-.022** *-.046*	**.017** *.034*	**.002** *.035*
Parent's Finances	**-.039** *-.052*	**-.096*** *-.129*	**-.092** *-.115*	**-.163**** *-.206*
Months Unemployed	**.031** *.037*	**.041** *.049*	**-.037** *-.033*	**-.025** *-.022*
Edmonton	**.153**** *.285*	**.169**** *.317*	**N/A**	**N/A**
Toronto	**.185***** *.388*	**.219***** *.460*	**N/A**	**N/A**
Marital Status (married=1)	**N/A**	**N/A**	**.032** *.057*	**.045** *.081*
Adjusted R Square	.184***	.038***	.181***	.020*

* p<.05
** p<.01
*** p<.001

[1] Standardized estimates are in bold font and unstandardized estimates are in italics.

inequality. Second, the findings of no relationship between education and the structural index provide further evidence that higher education does not lead to a more conservative approach to explaining inequality.

CONCLUSIONS

In summary, the results in these 8 tables provide stronger support for enlightenment theory than for reproduction theory: individuals exposed to a university education tend to become more liberal on a range of issues. More specifically, the findings indicate that respondents who furthered their education at a university became more concerned about social problems, more tolerant of racial minorities, and less accepting of traditional gender roles. Moreover, by using panel data and controlling on T1 attitudes, this analysis provides more solid support for enlightenment theory than do many previous studies. Thus, university education can be depicted as having a positive impact on the values held by its participants, since it fosters a more enlightened, liberal-thinking and tolerant populous. The assertion of reproduction theory that students, although perhaps exhibiting more liberal attitudes on the general measures above, will show a greater attachment to the merits of individual effort as a determinant of one's economic position in society, and will not internalize structural policies to reduce inequality, was not supported with these data. Generally speaking, university students are not being socialized to accept existing relations of dominance and subordination as reproduction theorists maintain. At the same time, they are not more likely to favour structural policies to reduce inequality over individual explanations for inequality. In other words, we need to seriously question the fundamental assumption that the primary function of higher education is to meet the ideological needs of capital.

ENDNOTES:

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1. As a reminder, these gender breakdowns are derived from the weighted sample (by gender and academic program) that was created to rectify sample attrition.

2. This conclusion assumes that the same respondents appear at the top (or bottom) of the distribution in each of the two years examined.

3. Since the attitudinal variables have been collapsed in this table from 5 to 3 categories, we can only say that attitudes have generally remained the same. The movement between, for example, "strongly agree" and "agree" is not detectable with these collapsed categories.

4. To examine possible differential effects of education on the individual items contained in the index, separate regressions were run for each item. Indeed, extensive variation in the education coefficients was found across attitudinal items, ranging from .133 for the item "the treatment of Native Canadians" is a problem to -.047 for the statement that unemployment is a problem.

5. Age and presence of children were tested as additional control variables in all the models. However, neither of these variables affected the education coefficient to any noticeable degree. On this basis, it was decided not to include them in the basic model.

CHAPTER 7

TESTING CONTINGENCIES

INTRODUCTION

Having concluded that university education enlightens students, at least to an extent, there are several additional analysis that can be undertaken to delineate the nature of this relationship more precisely. Of primary importance is the testing of the academic program contingency hypothesis which proposes differences in the effects of education between programs of study. Secondly, as mentioned, results of both the crosstabulations and regression analyses in Chapter 6 provide some evidence that the relationship between education and attitudes may not be linear. Is it the case that exposure to university for the first couple of years makes some difference, but that further exposure leads to a greater rate of change? In other words, is the relationship between university education and attitude change positive and curvilinear? There is also a possibility that once university attendance is complete, the subsequent period of time spent in alternative activities may erode the liberalizing effects of university. Since we found that those respondents who did not attend university became more conservative over time, the question remains as to whether the effects of education remain among those who have completed their university. Finally, to determine whether the liberalizing effects of university education are also evident for other types of post-secondary education, a multivariate analysis substituting university education with other post-secondary education (e.g., college and technical institutions) was done. These specific model qualifications will be explored after the academic program contingency is tested.

TESTING THE ACADEMIC PROGRAM CONTINGENCY HYPOTHESIS

According to proponents of the academic program contingency hypothesis, the student population cannot be treated as a homogenous group. Rather, it is argued, each type of university program promotes its own set of beliefs that will differentially affect students' value systems and how they view the social and economic world. Students in the liberal arts, for example, may become more liberal while students from commerce or business may become more conservative (Guimond, Palmer and Begin, 1989). Accordingly, higher education can have both a conservative and a liberal effect, depending on the area of study. Thus, the enlightenment effects found in the basic regression analyses (Chapter 6) may be stronger for some programs and even reversed for others (e.g., support for reproduction theory).

The contingency model assumes that academic areas differ in the components of the dominant ideology they pass on to students. For example, members of business and commerce departments would be more likely to support pro-capitalist ideologies, advocating the goal of profit-making in a 'free market' based on individualist values. Conversely, it is maintained that liberal arts departments (and particularly the social sciences) hold and foster a more critical stance towards social and economic inequality.

Within the limitations of the sub-sample sizes and in an attempt to replicate the program categories used by researchers in this area, four program categories were created. These are 1) liberal arts, 2) business, 3) science and, 4) professional programs[1]. Among the 33.1% (n=277)[2] of the 4-year, tri-city sample who attended university, 45.1% were in liberal arts, 14.8% in business, 29.6% in science and 10.5% in professional programs. For the 7-year, single city data, 35.9% were in liberal arts, 14.7% in business, 25.6% in science, and

23.7% in professional programs. The specific content of each of the four academic areas is listed in Appendix D.

When hypothesizing about the differential effects of program of study on attitudes, it is important to note the distinction between the two sets of measures representing reproduction and enlightenment theory. The enlightenment measures can be viewed as indicators of social values whereas the reproduction indices examine economic values. With two dimensions of values, we have four possible outcomes: students may exhibit liberal or conservative tendencies on both items, or may be liberal on the social items but conservative for the economic indices or vice versa. Thus, by drawing upon the assumptions of ideological attachment exhibited by each program, two sets of hypotheses can be outlined within each value dimension. First, for the enlightenment measures of social values we would be looking for possible ideological differences between programs in terms of the extent to which their curriculum speaks to social inequality. For most of the liberal arts, we would expect a relatively explicit addressing of gender and race inequality in the curriculum. There is nothing about the other three programs, however, that would indicate that these issues comprise part of their curriculum, at least to any great extent. Thus, it is hypothesized that for the enlightenment measures, students in the liberal arts will become more liberal and tolerant than students in the other three programs.

For the reproduction measures of economic inequality, it is maintained that liberal arts students are encouraged to rely on structural explanations for inequality whereas individual explanations are fostered in business and commerce. Students from the liberal arts would be taught to reason that some groups are disadvantaged because they have been systematically denied the same opportunities as other groups. Business students, on the other hand, might be more likely to argue that inequality exists because of individual

differences in ability or ambition. Thus, it is hypothesized that liberal arts (social science and humanities) students exhibit a stronger attachment to structural policies to reduce inequality and weaker support for individual explanations than do business or professional students.

Again, we would expect nothing in the science curriculum that speaks to the underlying basis of economic inequality. Accordingly, it is predicted that students in the sciences will fall somewhere between business and liberal arts students on a conservative/liberal scale. The professional programs, however, are comprised of a greater mix of program types, ranging from nursing to engineering to law, making it difficult to delineate a precise hypothesis about the direction of change. The profession of law, for example, addresses principles surrounding the judgement of right and wrong and thus may have some indirect influence on students' attitudes towards economic inequality. Much like the sciences, it is less likely that engineering students will be exposed to a curriculum that addresses these issues. Nevertheless, it is unlikely that students in the professions will be as liberal as those in the liberal arts nor as conservative as those in business.

In terms of the two theories, partial support for reproduction theory will be found if we detect distinct differences between students' adherence to individual explanations and structural policies to reduce inequality on the basis of program of study. These hypotheses are also in line with the research of Guimond et al. (1989) who have found support for the contention that liberal arts students are more tolerant and liberal while business students are more conservative. Baer and Lambert (1990), however, find support for a weaker version of the theory, namely that although business and professional students become more conservative, liberal arts and natural science students exhibit little change.

Support for either prediction will be taken as evidence for the academic program contingency hypothesis.

Again, none of these theoretical variants can be adequately tested without controlling on attitudes in the first year of the study (1985). Since neither of these two opposing perspectives used longitudinal data in their research, the present study represents a more conclusive examination of contingency theory.

As mentioned in Chapter 3, the research literature has not really specified the processes of attitude and value change. Little is known about the exact source of attitude change, whether it be curriculum content, instructors' ideologies, program subculture, or a broader culture of liberal thinking fostered within the university as a whole. Values may be transferred to students both cognitively (e.g., through curriculum) and socially (e.g., via a general cultural environment). However, by examining possible differences in attitude change on the basis of program of study, we might learn more about these mechanisms. If no program differences are observed, we have some evidence to reject curriculum as an important contributor to attitude change. Alternatively, findings that support the academic program contingency would lend credence to the proposition that course content and cultural milieu specific to each academic program is at least one of the ways that students' attitudes and values are shaped. These conclusions, however, would be tentative and only indicate a possible direction for future research.

Tri-Variate Results of Attitudes By Program of Study

Before presenting the results of the multivariate analysis, crosstabulations of attitudes by program of study and year will be examined. As in the analyses presented in Chapter 6 (Tables 6.3 and 6.4), these tables will allow us to see the differences between program, if any, in extent and direction of attitude change as well as detect the presence of a selectivity bias. Again, if we find that students in the liberal arts express more liberal views in 1985 compared to the other programs, then the importance of controlling on T1 attitudes is reinforced.

4-Year, Tri-city Results

Table 7.1 presents results for university students in the 4-year, tri-city sample (respondents who did not attend university are omitted). Looking first at the percentage change across the 4 years in the "total" column, there is evidence of some movement towards more liberal attitudes. Of the eight attitudinal domains, four illustrate that university respondents have become more liberal in their views towards social and economic issues. This contrasts to the same analysis for the total sample (including both those who did and those who did not attend university) in Chapter 6 (Table 6.3) where it was found that, on average, most of the respondents had become more conservative. The comparison of the findings from both tables parallels the regression results showing that university students become more liberal than those sample members who did not attend university.

Three interesting findings can be gleaned from Table 7.1. First, there is some evidence of a selectivity bias, however, it is particularly noticeable among professional students who are the most liberal in 1985 in 5 of the 8 categories. At the same time, these same students are most likely to become less liberal than any of the program groups. For example, in 1985 65.5% professional

students agreed that female job discrimination was a problem compared to 50.8% of arts students, 37% of science students and 41.5% of business students. By 1989, however, professional students were less likely to agree with this statement than were arts and science students (46.4% compared to 52.0% and 56.8% respectively). Thus, professional students enter the university system with relatively liberal attitudes, but exposure to higher education appears to reverse this tendency. In other words, university education has a conservative effect on professional students for both the enlightenment and reproduction measures. This is interesting and suggests that something about the experience of taking medicine, engineering, law and similar professional programs, promotes conservative thinking. Even more interesting is the fact that more liberal students are attracted to these programs which then in turn, appear to erode their liberal tendencies. Again, however, the available data for the present study cannot tell us exactly what is occurring except to speculate that the underlying ideology of the professional subculture is based on conservative thinking. Yet, if this is the case, then why are more liberal students attracted to these programs in the first place? This issue raises a whole series of interesting questions about the images that different programs foster, as well as the extent to which people choose programs that they assume will be congruent with their own ideologies.

If we examine the selectivity bias for the other three programs of study, they are in line with the ideological assumptions predicted for each program. Next to professional students, arts student are the most liberal in 1985, followed by science and finally business students. Thus, at this point, we can only infer that, in contrast to the other respondents, professional students may have mistakenly assumed that the professions would be more in line with their own way of thinking than they actually turned out to be. Alternatively, professional

students may be more likely than other students to take these programs purely on the basis of subject interest or career opportunities.

Second, business students begin their post-secondary education with the least liberal attitudes and after their exposure remain the least liberal, despite the fact that for some attitudes they undergo substantial positive change. For example, for the treatment of Native Canadians item, business students begin the study with the least liberal attitudes (almost half as many agree with this statement than the other programs), show a 9.5% increase in liberal attitudes, but remain the least liberal of all groups.

Both reproduction measures, however, illustrate increasingly conservative attitudes among business students over time, particularly for individual explanations for inequality. But, the predictions of the program contingency model that business programs shape their students into more conservative thinkers is not supported if we take into consideration their conservative tendencies before they begin university. Yet, given that the reproduction measures do indicate that business students become more conservative, then we have qualified support for reproduction theory at least in terms of program of study.

TABLE 7.1
DISTRIBUTION OF ATTITUDES[1] BY TIME PERIOD AND PROGRAM OF STUDY
4-Year Sample

ENLIGHTENMENT THEORY MEASURES:	Total 1985 (n=278)	1989	% Chnge	PROGRAM OF STUDY Arts 1985 (n=125)	1989	% Chnge	Professional 1985 (n=29)	1989	% Chnge	Science 1985 (n=83)	1989	% Chnge	Business 1985 (n=41)	1989	% Chnge
General Social Problem Index															
No Problem	3.2	4.3	1.1	3.9	3.2	- 0.7	0.0	10.7	10.7	3.6	3.7	0.1	2.4	4.8	2.0
Neutral	33.9	42.4	8.5	28.4	40.0	11.6	28.6	46.4	17.8	36.2	37.0	0.8	51.2	57.4	6.2
Problem	62.9	53.3	-9.6	67.7	56.8	-10.9	71.4	42.9	- 28.5	60.2	59.3	- 0.9	46.3	38.1	- 8.2
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Immigrant Taking Jobs															
Agree	24.3	24.3	0.0	23.4	25.6	2.2	27.6	21.4	- 6.2	22.2	24.1	1.9	29.3	22.5	- 6.8
Neutral	29.0	30.5	1.5	27.4	31.2	3.8	24.1	17.9	- 6.2	28.0	30.5	2.5	39.0	37.5	- 1.5
Disagree	46.7	45.2	- 1.5	49.2	43.2	- 6.0	48.3	60.7	12.4	50.0	45.6	- 4.4	31.7	40.0	8.3
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Racial Discrimination a Problem															
Disagree	20.9	13.8	- 7.1	23.8	13.6	-10.2	10.7	14.3	3.6	19.5	9.9	- 9.6	21.4	21.4	0.0
Neutral	32.0	34.9	2.9	27.8	34.4	6.6	25.0	32.1	7.1	34.1	32.0	- 2.1	45.2	42.8	- 2.4
Agree	47.1	51.3	4.2	48.4	52.0	3.6	64.3	53.6	- 10.7	46.3	58.0	11.7	33.3	35.7	2.4
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

[1] All attitude variables are coded so that the bottom category in gray shade represents the most liberal attitude.

TABLE 7.1 (Cont'd)

	Total			PROGRAM OF STUDY										
				Arts			Professional			Science			Business		
	1985 (n=278)	1989	% Chnge	1985 (n=125)	1989	% Chnge	1985 (n=29)	1989	% Chnge	1985 (n=83)	1989	% Chnge	1985 (n=41)	1989	% Chnge
REPRODUCTION THEORY MEASURES:															
Individual Explanations Index															
Agree	35.3	48.2	12.9	32.0	44.0	12.0	34.5	39.3	4.8	39.8	53.8	14.0	36.6	56.1	19.5
Neutral	37.4	31.4	- 6.0	42.4	30.4	-12.0	41.4	42.8	1.4	27.8	27.5	- 0.3	39.0	34.1	- 4.9
Disagree	27.3	20.4	- 6.9	25.6	25.6	0.0	24.1	17.9	- 6.2	32.5	18.8	-13.7	24.4	9.8	-14.6
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Structural Policies Index															
Disagree	15.2	22.1	6.9	16.7	20.2	3.5	10.0	28.6	18.6	12.3	19.2	6.9	19.5	30.0	10.5
Neutral	50.5	36.4	- 14.1	48.4	38.7	- 9.7	46.7	39.3	- 7.4	56.8	29.5	- 27.3	46.4	40.0	- 6.4
Agree	34.3	41.5	7.2	34.9	41.4	6.5	43.3	32.1	-11.2	30.9	51.3	20.4	34.1	30.0	- 4.1
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

TABLE 7.1 (Cont'd)

ENLIGHTENMENT THEORY MEASURES:	Total 1985 (n=278)	1989	% Chnge	PROGRAM OF STUDY: Arts 1985 (n=125)	1989	% Chnge	Professional 1985 (n=29)	1989	% Chnge	Science 1985 (n=83)	1989	% Chnge	Business 1985 (n=41)	1989	% Chnge
Treatment of Native Canadians															
Disagree	17.3	12.6	- 4.7	14.4	9.5	- 4.9	27.6	17.9	- 9.7	15.9	13.4	- 2.5	21.4	19.0	- 2.4
Neutral	30.3	31.3	1.0	26.4	28.6	2.2	17.2	25.0	7.8	30.5	31.8	1.3	50.0	42.9	- 7.1
Agree	52.3	56.0	3.7	59.2	61.9	2.7	55.2	57.1	1.9	53.7	54.9	1.2	28.6	38.1	9.5
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Female Job Discrimination a Problem															
Disagree	19.5	14.5	- 5.0	17.5	12.8	- 4.7	13.4	14.3	0.9	25.9	14.8	-11.1	24.4	19.5	- 4.9
Neutral	33.6	33.5	0.1	31.7	35.2	3.5	31.0	39.3	8.3	37.0	28.3	- 8.7	34.1	34.1	0.0
Agree	46.9	52.0	- 5.1	50.8	52.0	1.2	65.5	46.4	-19.1	37.0	56.8	19.8	41.5	46.4	4.9
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100. 0	0.0	100.0	100.0	0.0
Husband Main Income Earner															
Agree	17.0	10.8	- 6.2	15.1	9.6	- 5.5	16.7	7.1	- 9.6	19.8	12.2	- 7.6	17.1	14.6	- 2.5
Neutral	23.5	15.2	- 8.3	19.8	16.0	- 3.8	16.7	3.7	- 13.0	25.9	19.5	- 6.4	34.1	9.8	- 24.3
Disagree	59.6	74.0	14.4	65.1	74.4	9.3	66.7	89.3	22.6	54.3	68.3	14.0	48.8	75.6	26.8
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

Also, by comparing the distributions of attitudes between business students in this table and non-university respondents from Table 6.3, the former group appear to be even more conservative than are non-university sample members on several attitudes. Looking at the 6 enlightenment measures, business students are slightly more conservative in 3 attitude domains and more conservative on both reproduction items in 1989. Whereas only 9.8% of business students rejected individual explanations for inequality and 30% favoured structural policies, 15.5% and 51.6% of non-university sample members responded similarly to these two measures (Table 6.3). Even after considering that there is a selectivity bias among business students (i.e., they were more conservative in 1985 than were non-university students), they become more conservative in their attitudes over the 4 years than do the non-university group. This provides strong evidence to support the differential impact of program of study on attitudes. That is, not only do we find that business students become more conservative than other students, but having a university education in business fosters more conservative attitudes than any other category of respondents, including non-students.

A third observation that can be gleaned from Table 7.1 is that arts students are indistinguishable from science students in their liberal tendencies. With few exceptions, not only do they start off with approximately the same level of liberal attitudes, but after their exposure to university, end up at about the same level.

These data provide support for the prediction that business students will become more conservative in their attitudes regarding economic inequality (reproduction measures). However, the findings do not support the hypothesis that business students would exhibit stronger conservative attitudes as

measured by the enlightenment measures, compared to science or professional students. Moreover, it does not appear that liberal arts students become more liberal than do students in the other three programs on either attitude dimension as predicted.

These conclusions are very tentative at this point since other explanatory variables are not included in this analysis, and because the attitudinal measures have been collapsed from 5 to 3 categories. In addition, the results for the 7-year sample may show different patterns since it includes a possible 3 more years of university attendance.

7-Year, Single-City Results

Table 7.2 below presents the findings for the 7-year sample of university students. Like the findings in Table 7.1, most respondents have become more liberal in their attitudes between 1985 and 1992. The most surprising finding is the drastic difference in enlightenment attitude change of business students between the two samples. In the 7-year sample, while business students exhibit the least liberal attitudes in 1985, they undergo the most dramatic attitudinal change to become the most liberal by 1992. For example, the 23 business students are the least likely to disagree that a husband should be the main family income earner in 1985 (43.5%) but the most likely to agree with this same statement in 1992 (95.7%) after their exposure to university, representing a positive change of over 50%. One possible explanation is that the extra years of university attained by members of the 7-year sample foster more liberal thinking. However, it is difficult to imagine a business program where the ideology that accompanies undergraduate education is so drastically different from the ideological bases of later years (e.g., graduate programs). More likely,

TABLE 7.2
DISTRIBUTION OF ATTITUDES[1] BY TIME PERIOD AND PROGRAM OF STUDY
7-Year Sample

	Total			PROGRAM OF STUDY										
				Arts			Professional			Science			Business		
	1985 (n=156)	1992	% Chnge	1985 (n=56)	1992	% Chnge	1985 (n=37)	1992	% Chnge	1985 (n=40)	1992	% Chnge	1985 (n=23)	1992	% Chnge
ENLIGHTENMENT THEORY MEASURES:															
Immigrants Taking Jobs															
Agree	25.6	16.8	- 8.8	28.6	20.4	- 8.2	18.9	8.3	- 10.6	25.6	19.5	- 6.1	30.4	16.7	-13.7
Neutral	26.3	31.6	5.3	23.3	31.6	8.3	21.6	38.9	17.3	25.6	34.1	8.5	43.5	16.7	-26.8
Disagree	48.1	51.6	3.5	48.2	48.1	- 0.1	59.5	52.8	- 6.7	48.7	46.3	- 2.4	26.1	66.7	40.6
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Husband Main Income Earner															
Agree	15.9	7.7	- 8.2	16.1	5.5	- 10.6	10.5	13.5	3.0	17.5	7.3	- 10.2	21.7	4.3	-17.4
Neutral	27.4	10.9	- 16.5	16.1	14.5	- 1.6	36.8	10.8	- 26.0	30.0	12.2	- 17.8	34.8	0.0	-34.8
Disagree	56.7	81.1	24.7	67.9	80.0	12.1	52.6	75.6	23.0	52.5	80.5	28.0	43.5	95.7	52.2
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0
Wife Mainly Responsible for Raising Children															
Agree	8.3	5.1	- 3.2	7.1	1.8	- 5.3	5.3	5.3	0.0	12.5	7.3	- 5.2	8.7	8.7	0.0
Neutral	21.0	10.9	-10.1	12.5	12.7	0.2	28.9	18.4	-10.5	17.5	4.9	- 12.6	34.8	8.7	-26.1
Disagree	70.7	84.0	13.3	80.4	85.5	5.1	65.8	76.3	10.5	70.0	87.8	17.8	56.5	82.6	26.1
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0

[1] All attitude variables are coded so that the bottom category in gray shade represents the most liberal attitude.

ENLIGHTENMENT REPRODUCTION THEORY MEASURES:	Total 1985 (n=156)	1992	% Chnge	Arts 1985 (n=56)	1992	% Chnge	PROGRAM OF STUDY Professional 1985 (n=37)	1992	% Chnge	Science 1985 (n=40)	1992	% Chnge	Business 1985 (n=23)	1992	% Chnge	
Individual Explanations Index																
Agree	34.0	46.4	12.4	29.1	52.8	23.7	40.5	51.4	10.9	40.0	37.5	- 2.5	26.1	39.1	13.0	
Neutral	35.9	32.0	- 3.9	38.2	24.6	-13.6	37.8	29.6	- 8.2	22.5	32.5	10.0	47.8	52.2	4.4	
Disagree		30.1	21.6	- 8.5	32.7	22.6	- 10.1	21.6	18.9	- 2.7	37.5	30.0	- 7.5	26.1	8.7	- 17.4
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	
Structural Policies Index																
Disagree		12.9	22.9	10.0	20.0	26.4	6.4	7.9	21.6	13.7	5.0	17.5	12.5	16.7	26.1	9.4
Neutral	52.9	34.6	- 18.3	52.7	39.6	-13.1	50.0	29.8	- 20.2	67.5	30.0	- 37.5	33.3	39.1	5.8	
Agree	34.2	42.5	8.3	27.3	34.0	6.7	42.1	48.6	6.5	27.5	52.5	25.0	50.0	34.8	-15.2	
Total	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	100.0	100.0	0.0	

the difference between the results of the two samples is due to the exclusion of Toronto and Sudbury from the longer data analyses where the 'city' control variables will allow us to examine this possibility.

The reproduction measures paint a different picture for the business students, but one that is more congruent with the findings in Table 7.1. Although they did not exhibit as much of an increase in support of individual explanations for inequality as did arts students, they did reveal the greatest reduction in the percentage of students disagreeing with this item (-17.4%). In terms of structural policies, however, business students began the study with the strongest support for this index (50% agreed), but by the time the study was completed in 1992, exhibited the greatest reduction in liberal attitudes (-15.2%). Again, the findings present partial support for the reproduction version of the academic program hypothesis that students in business programs will become less accepting of structural policies to reduce inequality. To a lesser extent, these results also show them becoming more in favour of individual explanations for inequality.

Also in accordance with the findings of Table 7.1, arts students in the 7-year sample do not differ in any significant way from the sciences, and are also relatively indistinguishable from students in professional programs. For example, 48.2% of liberal arts students disagree with the 'immigrants taking jobs' item in 1985 (compared to 59.5% of professional students and 48.7% of science students). This decreases by 0.1% in 1992 for the liberal arts students, 6.7% for the professional students and 2.4% for science students.

The findings from both tables provide partial support for the academic program hypothesis, at least for the reproduction claims of increasing individualism for business students. The prediction that arts students will

become more liberal than students in other programs, however, is not supported. Nor do we find evidence to support an enlightenment version of the academic program hypothesis, namely, that students can be differentiated by program of study when examining change in their social attitudes. It also remains unclear why the enlightenment measures for business students changed so dramatically between the two samples. Again, however, this last issue will be further explored in the following multivariate analyses.

MULTIVARIATE REGRESSION RESULTS

To further test these tentative conclusions and perhaps shed some light on the different sample findings, regression analyses were done for both samples by including four program-of-study binary variables with "no university" as the reference category. Several versions of program categorization were explored, however, no one model changed the overall conclusions to any great extent. As a result, the final model partially replicates Baer and Lambert's (1990) model where both university and non-university respondents were included in the model. By using the full sample model (as opposed to just university students), the larger sample size permitted a more detailed categorization of 4 program categories as follows: liberal arts, professional (e.g. medicine, engineering), business and science with no-university as the reference category. When using four binary variables we can interpret the coefficient for the professional variable, for example, as an indication of the effect of the professional program on attitude change controlling on the 3 other program categories. In essence then, the parameter for the professional program is an estimate of the difference between professional students and sample members who had no university. Thus, the absolute value of the parameter estimate becomes less important than its

relative size (and direction) compared to the equivalent coefficients for each program. The regression analyses include the same control variables used in the full model in Chapter 6. However, the coefficients for the control variables are not presented, since our main interest is in differences across programs. The unstandardized parameter estimates for the program variables are presented below in Table 7.3 for all attitude measures and both samples.

The first conclusion that can be gleaned from Table 7.3 is that there is no indication that liberal arts students become more enlightened than do any of the other students. In fact, among the arts, sciences and professional categories, there is only one significant coefficient (beta = .482 for individual explanations for inequality for science students in the 7-year sample), suggesting that students in these three programs are relatively undifferentiated in terms of attitude change. Even when significance levels are ignored for the moment, there is only one attitudinal item in each sample where arts students become more liberal, compared to non-students. For attitudes towards the treatment of Native Canadians in the 4-year sample, arts students become more liberal than the other 2 programs (beta = 0.62 for liberal arts compared to -.119 and -.133 for science and professional programs respectively). In the 7-year sample, liberal arts students become more liberal with respect to immigrants than do science and professional students (beta = .334 compared to .109 and .271 for science and professional students, respectively). Again, however, since none of these estimates are significant, combined with the results from the prior two crosstab tables (Table 7.1 and 7.2), it is concluded that liberal arts students do not become more liberal than do other students.

In the 4-year sample, business majors exhibit markedly different patterns of attitude change than do other students. Specifically, business majors are

significantly less liberal in their attitudes compared to the arts, science, and to a lesser extent, professional students. In fact, with the exception of the 'husband main income earner' item, business students become the most conservative for all items compared to respondents in the other programs for the tri-city sample. Yet, as we found for Table 7.2, business students exhibit more movement towards liberal attitudes on the enlightenment measures in the 7-year sample.

There are two possible explanations for the marked difference in the attitude change of business students between the two samples: the 7-year sample does not include respondents from Toronto and Sudbury, and there are more years covered in the 7-year sample. To test if the differences are due to city differences, the attitude measures were regressed on program of study (and the other control variables) only for Edmonton respondents in the 4-year sample. In general, the results do not indicate that the business students in the Edmonton component of this sample responded more liberally than do those from Toronto or Sudbury. Yet, the fact that some questions were included in one sample and not the other makes it difficult to make one-to-one comparisons across samples. Thus, most importantly, although there were no differences between Edmonton and the other two cities for one of the two attitudinal items that are common to both samples (husband the main income earner, beta = .140), the coefficient for students in the business program was positive (but not significant) among the Edmonton respondents and negative for the total sample (beta = .026 compared to -.065) for the 'immigrants taking jobs' question. Since Edmonton sample members responded more liberally in 1989, we can conclude that the sample difference is partly due to city differences, at least for this one item on attitudes towards immigrants.

To examine the effects of the greater number of years covered by the 7-year sample, attitude distributions were examined at the survey points of 1985, 1989 and 1992 for business students for the two attitudinal items common to both samples. For the 'immigrants taking jobs' item, Edmonton business students began the survey with slightly less liberal views than did business students from the other two cities (26.1% of Edmonton respondents disagreed with the statement in 1985, compared to 36.1% of Toronto and Sudbury respondents combined), but became more liberal by 1989 (48.2% compared to 34.2%) and even more so by 1992 (67.4% compared to 34.2%). These figures represent a 23.1% positive change for Edmonton business students between 1985 and 1992 compared to a drop of -1.9% for Toronto and Sudbury business students. For the 'husband the main income earner' measure, again Edmonton business students began the survey with less liberal attitudes than their counterparts in the other two cities (42.3% versus 53.9% disagreed with the statement), became more liberal by 1989 but not as much as business students in the other two cities (65.5% compared to 82.2%) and ended the study with very liberal attitudes in 1992 (95.4%). Importantly, the percentage change in attitudes between 1985 and 1989 is about the same for each region (23.2% for Edmonton and 28.3% for Toronto/Sudbury). Thus, for this item it appears that more of the difference between the two samples may be a results of the greater time covered in the 7-year sample. In conclusion, these data indicate that the differences between business students in each sample are partly because of city differences but more because of differences in the number of years covered in each survey. With respect to the hypothesis derived from reproduction theory, the findings in Table 7.3 indicate that business students are less likely than all other students to agree that big business has too much power or that high income earners should

pay more taxes. In turn, they are more likely to agree that people who are poor or on welfare are in this position because of their own laziness or lack of effort. This pattern also holds for the 7-year sample, particularly for the structural policies index where business students are at least two times less likely to exhibit liberal attitudes than any of the other program categories (beta = -.714). Thus, in agreement with the conclusions from Tables 7.1 and 7.2, these data offer support for reproduction theory, as it applies to business students.

TABLE 7.3
REGRESSION OF ATTITUDES
ON PROGRAM OF STUDY AND CONTROL VARIABLES[1]

	4-Year Sample				7-Year Sample			
	Arts (n=125)	Science (n=83)	Prof. (n=29)	Bus. (n=41)	Arts (n=56)	Sci. (n=40)	Prof. (n=37)	Bus. (n=23)
General Social Problems Index	-.048	-.042	-.133	-.298*	N/A	N/A	N/A	N/A
Immigrants Taking Jobs	-.011	-.093	.215	-.065	.334	.109	.271	.567
Racial Discrimination a Problem	-.109	.098	-.095	-.462*	N/A	N/A	N/A	N/A
Treatment of Native Canadians	.062	-.119	-.133	-.279	N/A	N/A	N/A	N/A
Husband Main Income Earner	-.062	-.138	.227	.136	.148	.304	.108	.653*
Wife Responsible for Raising Children	N/A	N/A	N/A	N/A	-.012	.075	-.229	.082
Female job Discrim. a Problem	.086	.255	.053	-.048	N/A	N/A	N/A	N/A
Individual Explanations for Inequality Index	.119	.029	.151	-.196	.259	.482**	.219	.130
Structural Policies to Reduce Inequality Index	-.031	.048	-.296	-.357	-.282	-.278	-.316	-.714**

* p<.05; ** p<.01; *** p<.001

[1] This table presents unstandardized regression coefficients for four binary 'program' variables for multiple regression equations run separately for each dependent variable. The coefficients for the control variables included in each equation are not presented in this table since we are primarily concerned with differences across programs.

SUMMARY

In general, the findings of both the crosstabulations and multivariate regression analyses do not support the enlightenment version of the program of study hypothesis, namely, that students in liberal arts programs will become more liberal in their social views compared to students in the three alternative programs. Nor is there evidence to suggest that liberal arts students are any more likely to adopt structural policies and reject individual explanations for inequality. Thus, at least for the liberal arts students, neither the reproduction or enlightenment versions of the program of study contingency hypothesis are supported. Arts students do not become more supportive of social equality and more critical of structural sources of inequality, nor do they become more tolerant of minority groups and more liberal in their attitudes towards gender roles and issues.

Alternatively, the prediction that business students become more conservative in their views on the bases of economic inequality receives some support from this research. Thus, we can conclude that program of study does differentially affect the formation of social and economic attitudes, although apparently only for business students.

Since we have observed program differences between business and other students, there is some evidence that curriculum content and/or socio-cultural climate can contribute to attitude change. There appears to be a more distinct ideological content in business programs that is being transferred to students. As predicted by the program contingency model, business faculties may foster a more individualist view of economic inequality. One can imagine a young person with pro-capitalist views of the economy being attracted to a program that promotes these same principles. Similarly, one can imagine that spending time

in this environment leads to further adherence to a conservative ideology. Alternatively, since there is no evidence that liberal arts students become more liberal in their attitudes, perhaps our assumptions about the program content of the liberal arts (i.e., they are more critical of the status quo) requires some revision. Again, this portrayal may be more accurate for some specific programs (e.g., sociology), but these findings indicate that it misrepresents the ideological tendencies of the liberal arts programs in general.

Still, as the findings from Chapter 6 show, university students do change their attitudes and values in a different way than do non-university respondents. With the exception of business students, most university respondents became more enlightened. This suggests that students' social and economic attitudes and values may also be shaped by a more general cultural milieu found on campuses. Thus, we have evidence that the university is a site of both global (campus-wide) and local (program-specific) socialization. These conclusions, however, are merely suggestive since the mechanisms of attitude change were not directly tested in this study. More reasonably, these findings indicate a possible direction for future research.

ALTERNATIVE TESTS OF THE CONTINGENCY MODEL

It remains possible, however, that the program categories are misspecified. But while several different combinations of programs were tested (e.g., medical and engineering students were moved from the professional designation into the sciences; professional and business programs were combined), these changes made little or no difference in the conclusions. Also, an analysis involving only respondents who had a degree was conducted, but again no support for the enlightenment version of the academic program

contingency hypothesis was found. In another analysis, only university students were included, and the multivariate equation included two binary variables representing business/professional and science students (with liberal arts as the reference category). This test also failed to reveal any consistent or interpretable patterns.

Yet, these tests do not exhaust all possible misspecifications. For example, it may be that the four broad program categories are too crude as they group together smaller programs that may be distinct. For example, perhaps students in sociology and political science become more liberal compared to those in economics or geography, but since they have been treated as one group any differences are undetectable. Unfortunately, the data do not allow this kind of detailed analysis (e.g., arts students are undifferentiated in the data set). Thus, these conclusions should be treated with some caution. It remains possible that there are subtle differences between programs included within the larger categories used in this study.

EXPLORING PATTERNS OF ATTITUDE CHANGE

Testing for Non-Linearity and the Lasting Effects of University Education on Attitudes

There are several possible diverging patterns of attitude change that can be explored to add to our understanding of the enlightening effects of education on attitudes. Having established that university education has a liberalizing effect in some attitude dimensions on respondents (except business students), the question remains as to whether or not varying patterns of university education lead to different changes in attitudes. Two possible educational patterns will be examined. First, variations in the amount of education will be

explored by examining the effects of each additional year of university. Results of both the crosstabulations and regression analyses in Chapter 6 provide some hints that the relationship between education and attitudes may not be linear, such that university education makes some difference in the first couple of years, but that further exposure leads to a greater rate of positive change. Second, the lasting effects of a university education will be explored by examining whether post-university experience reduces the liberalizing effects of university. Both of these possibilities will be explored by comparing the mean attitude scores across each year of education.

By comparing the mean attitude scores for each consecutive year of university we can see more clearly whether the amount of education matters. And, by comparing the difference in mean scores between attitudes in the last year of university and in the last survey year, the effects of post-university experience will be observable. For most graduates, the period after university entails working in the paid labour market. Consequently, the experience of different priorities, lifestyles and economic concerns that are associated with working may reduce the liberalizing effects of university. In fact, results of the basic analysis presented in Chapter 6 suggest that alternative experiences other than university actually lead to an increase in conservative attitudes: specifically, respondents who did not attend university became more conservative over the period of the survey. Thus, although the models tested control on some socio-economic variables (e.g., months unemployed), there may be other factors in the environment in which post-university students find themselves that affect their attitudes. This analysis cannot uncover these other factors, but it can address the question of the extent to which the liberalizing effects of university are lasting.

The two questions examined in this section of the research will be addressed in the following 5 figures. The figures depict two mean attitude scores for five groups categorized by year(s) of university education completed. A multiple classification approach[3] was used to estimate the mean scores for each education group after controlling on Time 1 attitudes, gender, visible minority origins, parents' financial situation, parents' education level, marital status and total months unemployed. The first mean score represents attitudes in their final year of the survey (1992) for the group in question. The second mean score is for this group's attitudes in their final year of university. By comparing the two means we can see whether attitudes change after respondents leave university. Only the 7-year data are used in this analysis, since the 4-year sample does not cover enough years to assess the effects of post-university experiences. Some of the cells for single years of education contained less than 20 respondents and so they were collapsed from 7 to 5 categories.

Figure 7.1 below shows the adjusted mean scores for attitudes towards immigrants for the last year of the survey (left bars) and for the last year of full-time university education (right bars). Generally, there is a linear pattern such that for each additional year of education, respondents are increasingly more tolerant of immigrants and, therefore, more liberal. Since we are concerned with detecting non-linearity, however, it is notable that the largest increase in mean scores is between 0 and 1 years of university education, with a smaller increase between each subsequent category.

The mean attitude scores in the last year of university education (right bars) present a very similar pattern. The fact that they are consistently higher, however, indicates that respondents lose some of their liberal attitudes after university. It is important to note that the groups with the fewest years of

university are also those who have had the most experience outside of university. Since the difference between means for the last year of university attendance and 1992 is greatest among the groups with the fewest years of university (.22 for 1-3 and 4 years; .18 for 5 years; and .07 for 6-7 years), this suggests that subsequent university experience does reduce the liberalizing effects of university.

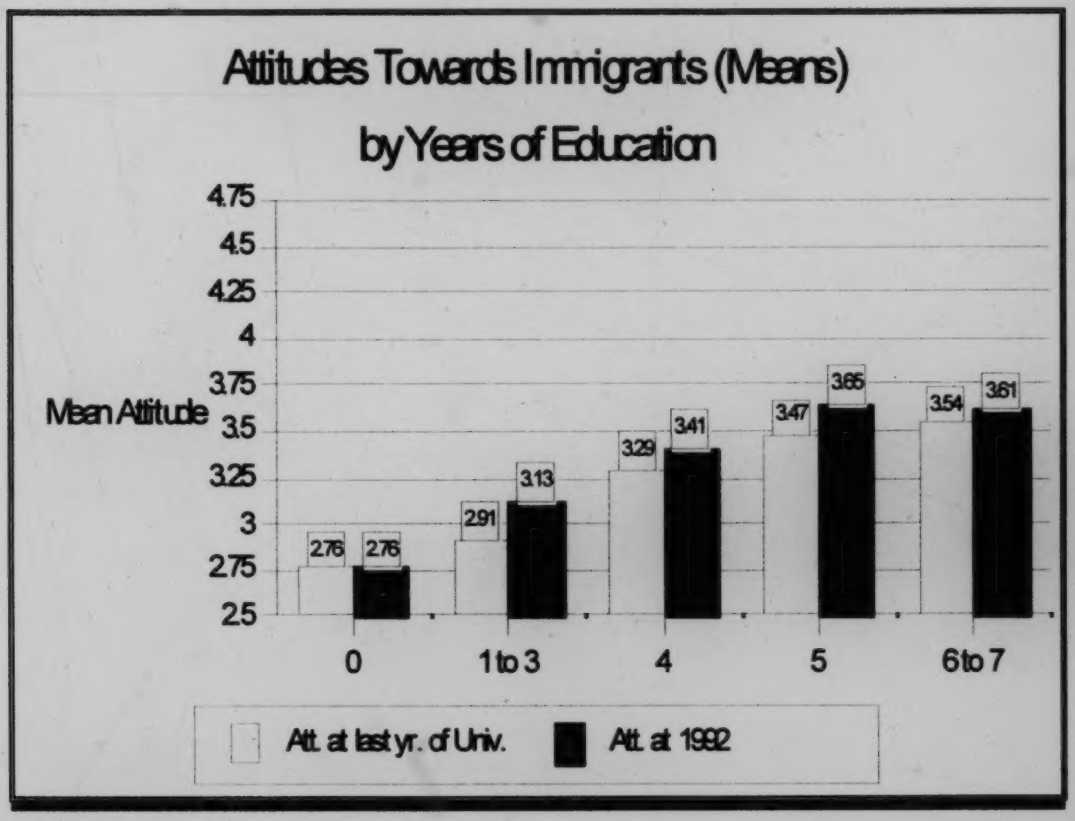

FIGURE 7.1

Figure 7.2 presents the mean scores on the item stating that the 'husband should be the main income earner'. Here, the mean scores show a positive and step-like pattern. The greatest difference between the means across education categories is for 0 and 1-3 years of education (.39). However, there is some reduction in liberal attitudes between the 4 and 5 years of education categories. The differences in the last year of university and the 1992 means is largest for the 1-3 year group who, on average, are .37 points less liberal in 1992 than in their last year of university. This mean is also only .02 points different from

respondents with no university education. Thus, like Figure 7.1, the data in Figure 7.2 suggest that post-university experience reduces the liberalizing effects of university.

Figure 7.3, showing the mean distributions for the statement that the 'wife should be mainly responsible for raising the children', also illustrates a significant increase in liberal attitudes between 0 and 1 years of education, but the biggest increase is between 3 and 4 years of university (.34). Otherwise, the pattern is much the same as for Figure 7.2 with increases in every year except between 1-2 and 3 years. Again, these data support the notion that post-university experience reduces the liberalizing effects of education, as indicated by differences between the 'last year of university' and the 1992 means for those who attended for only a few years.

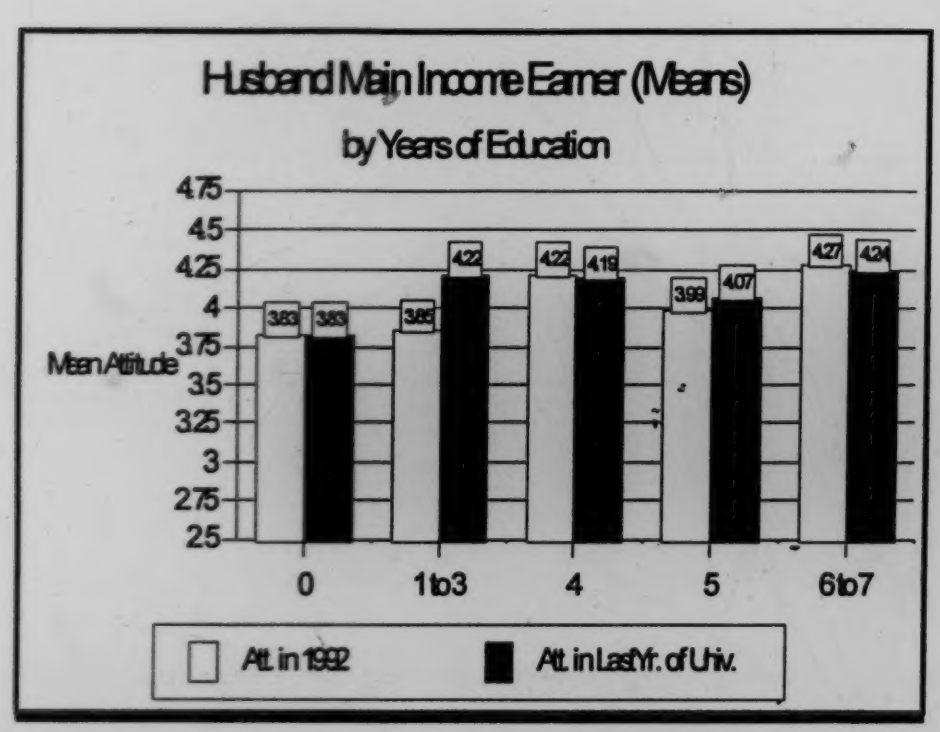
Husband Main Income Earner (Means)
by Years of Education
Mean Attitude
4.75
4.5
4.25
4
3.75
3.5
3.25
3
2.75
2.5
3.83
3.83
3.86
4.22
4.22
4.19
3.99
4.07
4.27
4.24
0
1to3
4
5
6to7
Att. in 1992
Att. in Last Yr. of Univ.

FIGURE 7.2

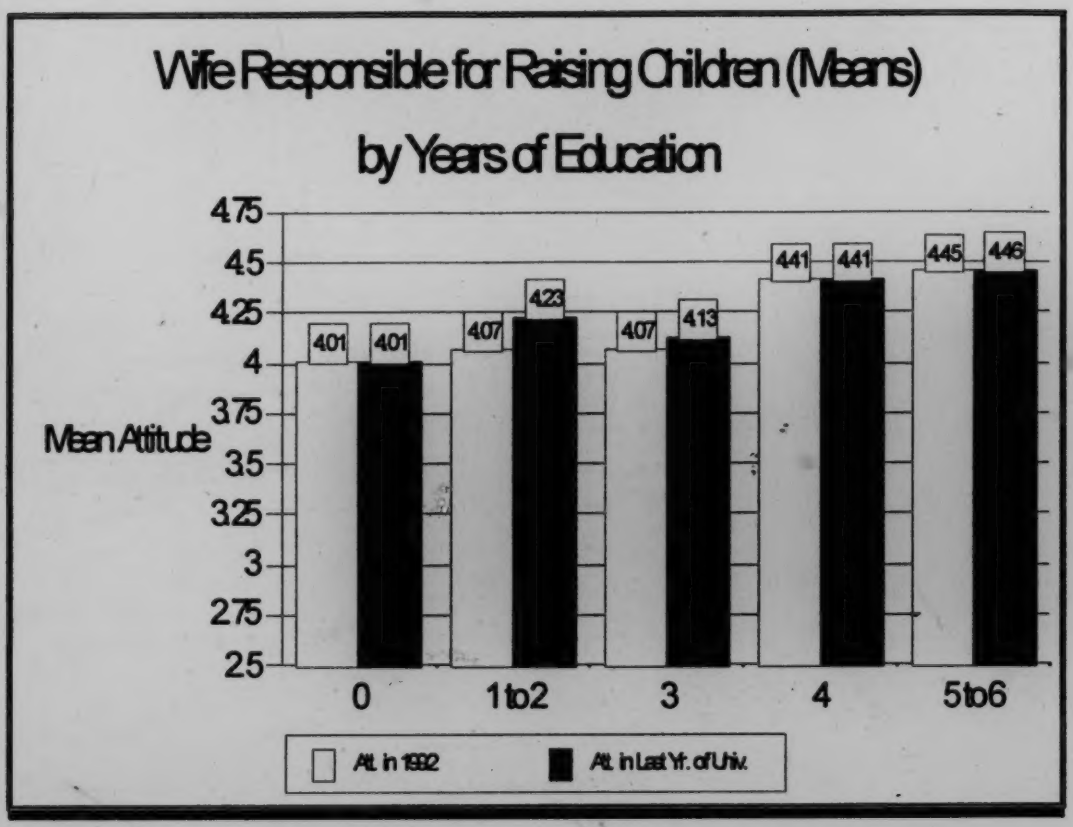

FIGURE 7.3

As shown in Figure 7.4, the change in attitudes from 0 to 1-3 years of education for the individual index is also large, but little change is observed in subsequent years. Again, we see some evidence of change after respondents leave university, that is, they become more individualistic in their explanations of inequality. Finally, Figure 7.5 presents the mean attitudes scores for the structural explanations index. Here we see a sizeable reduction in liberal attitudes between 0 and 4 years and then an increase for subsequent years of

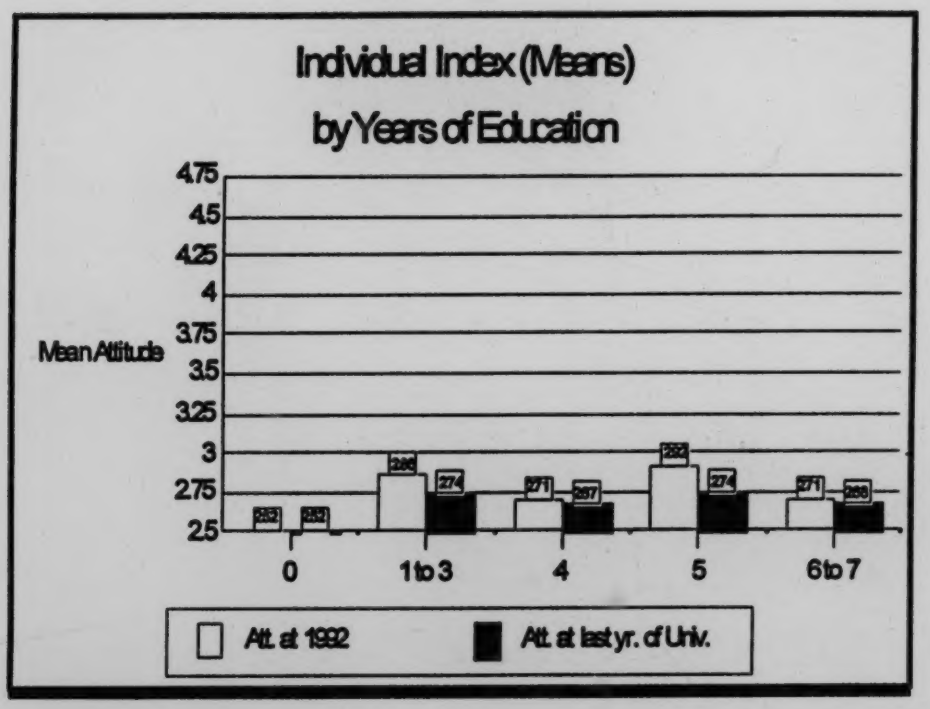
Individual Index (Means)
by Years of Education
Mean Attitude
4.75
4.5
4.25
4
3.75
3.5
3.25
3
2.75
2.5
0
1 to 3
4
5
6 to 7
Att. at 1992
Att. at last yr. of Univ.

FIGURE 7.4

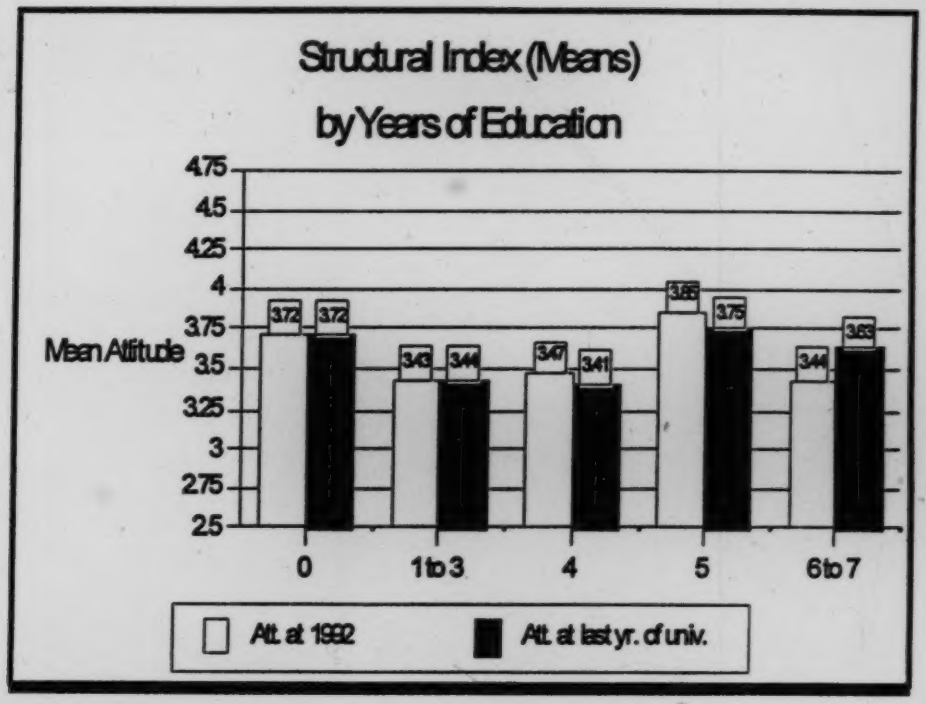
Structural Index (Means)
by Years of Education
Mean Altitude
4.75
4.5
4.25
4
3.75
3.5
3.25
3
2.75
2.5
372
372
343
344
347
341
385
375
344
363
0
1 to 3
4
5
6 to 7
Att. at 1992
Att. at last yr. of univ.

FIGURE 7.5

education. Unlike the previous graphs, however, the patterns of change after leaving university are not consistent across the five different groups.

SUMMARY

The results from these analyses indicate that university has the strongest liberalizing effect on attitudes in the first couple of years of study and, with some exceptions, continues to have this effect but at a reduced rate. However, after leaving university, this liberalizing effect is reduced somewhat for the three enlightenment measures. The results for the two reproduction measures, however, are inconsistent and less clear. But because the results of the basic regression model did not support reproduction theory, the erratic findings for these two measures should not be surprising.

Attitudes appear to be the most volatile among those who have had the least amount of university education. The biggest gain in liberal attitudes is observed when comparing respondents with no university to those with only a few years of university. But the latter are also exposed to the most years of post-university experiences, and hence, are also the least likely to retain their liberal attitudes. However, this pattern may simply reflect limitations in the data set, specifically in the length of time covered by the study. As it stands, the lasting effects of university among those with more than 4 years of exposure cannot really be determined. Although slight reductions in liberal attitudes after leaving university were observed for those with more than 4 years of university, a longer time period is needed to determine if these reductions would continue at the same rate as those observed for the group with only 1 to 3 years of university education who had a longer time (within the 7 years covered by the study) to lose

what they had gained in university. Alternatively, the liberalizing effects of education may simply be more stable among respondents with more university experience. That is, more university not only leads to more liberal attitudes, but also more lasting change. Unfortunately, to discern the relative influence of post-university experience and length of university exposure, a data set covering a longer time period would be required.

DISTINGUISHING BETWEEN UNIVERSITY AND OTHER POST-SECONDARY EDUCATION

Finally, to address the question of whether the effects of attending university on attitudes can also be found among those respondents who attended other post-secondary institutions, additional regression analyses were run with years of university education replaced by years of other post-secondary experience (including technical schools and colleges). Most prior research that examines the effects of education on attitudes is American, and since their post-secondary system is different in the sense that colleges and universities are less distinguishable than is the case in Canada, these studies have tended to group all types of higher education together. In Canada, however, institutions such as technical schools and colleges are more applied and less academically oriented than universities. Nevertheless, these other arenas of higher education may also change attitudes.

The results of these analysis, however, indicate that other post-secondary education has no significant effect on sample members' attitudes towards social and economic issues. Table 7.4 presents the coefficients for other post-secondary education for each attitude measure and each sample. Only two of the coefficients are significant, although it is interesting that they are almost all

negatively related to attitudes. That is, attending other post-secondary institutions tends to change attitudes so that they become more conservative, although not significantly so. These findings suggest that the university is unique as a post-secondary institution that enlightens students.

TABLE 7.4
REGRESSION RESULTS[1] OF ATTITUDES ON YEARS OF OTHER POST-SECONDARY EDUCATION[2] AND CONTROL VARIABLES[3]

	4 Year Sample	7 Year Sample
General Social Problems Index	-.049*	N/A
Immigrants taking Jobs	-.050	-.039
Racial Discrimination a Problem	-.044	N/A/
Treatment of Native Canadians a Problem	-.117**	N/A
Husband Main Income Earner	-.007	-.022
Wife Responsible for Raising Children	N/A	-.053
Female Job Desc. A problem	-.033	N/A
Individual Explanations for Inequality	-.037	-.018
Structural Policies to Reduce Inequality	-.031	.019

* p<.05
** p<.01
*** p<.001

[1] Unstandardized coefficients for the effects of other post-secondary education on attitudes are presented in this table.
[2] Includes colleges and technical institutions
[3] Coefficients for control variables are not presented since our main interest is in the relationship between attitude change and years of other post-secondary education.

CONCLUSIONS

The results of the analyses presented in this chapter help to further delineate the relationship between university education and attitude change. First, the findings of the crosstabulations (Tables 7.1 and 7.2) and regression analyses (Table 7.3) suggest that type of university education makes a difference in the direction of attitude change. Specifically, while students in liberal arts programs did not become significantly more liberal (in contrast to our hypothesis that they would become more liberal), business students exhibited increasingly conservative attitudes towards social inequality as years of university education increased. Second, the data presented in Figures 1 — 5 suggest that the greatest positive attitude change tends to occur in the first couple of years of education (1-3 years). Also, there is some evidence that the liberalizing effects of university education can be reversed in the years immediately following university attendance. Finally, the results of Table 7.4 strongly suggest that other types of post-secondary education such as college and technical schools do not have the same liberalizing effect on attitudes that we have observed for university education.

ENDNOTES:

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1. The most recent program of study was used for students who had spent time in more than one program.

2. This figure differs slightly from the percentage of respondents attending university (34.3% as shown in Table 6.1) because of missing data on the program of study variable.

3. Multiple Classification Analysis (MCA) is a form of analysis of variance that compares means on dependent variables adjusted to take into account the effects of control variables, across different categories of an independent variable.

CHAPTER 8

CONCLUSIONS AND DISCUSSION

INTRODUCTION:

Higher education has taken on an increasingly central role in the schooling of Canadians. Compared to its early origins in the middle of the last century where a very few select and primarily white males had access to higher education, the 1960s marked the beginning of a dramatic expansion in universities and in the number and diversity of student enrolments. More recently, the university has been swept into a tide of post-secondary restructuring that is based on market logic and an occupation-oriented curriculum. Yet, in contrast to other types of post-secondary education such as that provided by technical institutions and colleges which have always focused on developing specific occupational skills, the university has been traditionally viewed more broadly as an academic institution of global higher learning.

These external forces clearly threaten the university's unique role. As universities become more dependent on higher tuition rates they become more susceptible to the demands of students, anxious to gain a degree so they can compete in a difficult labour market. Similarly, as resources are increasingly provided by the corporate world, the university must also cater to the interests of this elite group. From the drug companies who offer huge grants for scientists to develop new drug therapies to social science survey institutes doing commercial research for businesses, the direction and integrity of research is clearly being compromised. To the extent that these forces influence the content of courses,

this will have an effect on the quality and breadth of education received by students. In addition, curriculum will be further modified as universities become more tied to the needs of business and more vulnerable to the narrow and labour market-oriented guidelines set out by the government.

If we take the position that the university should be a site where citizens are educated about the world in every way possible, then the implications of these changes on the kind of education that students are now receiving need to be explored. This study examined just one of these implications, but perhaps one of the more illusive and difficult to measure. That is, what does all this change mean for the values and attitudes adopted by students? Specifically, how does attending university in the late 1980s and early 1990s impact the way students think about the social and economic world?

This research has tested the predictions of two theories: the functionalist-based enlightenment theory which argues that students become more tolerant and liberal as a result of university education and the Marxist-oriented reproduction theory that students will become more supportive of individual as opposed to structural explanations of social inequality. The hypotheses deduced from these two theories have undergone extensive testing over the last 50 years with most studies finding support for enlightenment theory, although more recently support has also been found for reproduction theory. This research, however, has been plagued with methodological problems, not the least of which is the misuse of cross-sectional data to establish a change in attitudes. Thus, by using panel data, the present study provides a better test of change in attitudes

as a result of attending university. Also, given evidence of a broader social shift in values in a more conservative political and economic direction, as well as the pressures being exerted on the university system, this research offers a test of the two theories in a new economic, political and social climate both inside and outside the university.

MAJOR FINDINGS AND IMPLICATIONS:

Basic Results

The results of the basic analyses in Chapter 6 offer fairly solid support for the contention of enlightenment theory that university students become more liberal in their social and economic views. In contrast to sample members who did not attend university and who became more conservative in their attitudes between the mid 80s and up to the early 90s, university students exhibited more tolerant attitudes towards racial minorities and were less accepting of traditional gender roles and female job discrimination. Since we have controlled on several key socio-economic variables, we know that the differences found between university and non-university respondents are not a result of differences in socio-economic background. Moreover, by using longitudinal data and controlling on attitudes in 1985, we can be certain that the effects of education are causal and not a result of more liberal young people choosing to attend university.

On the other hand, university students differed little from non-students in their preferences for structural versus individual explanations of inequality. The assertion of reproduction theory that students, while perhaps exhibiting more

liberal attitudes on the general enlightenment measures, will internalize beliefs about individual effort as a determinant of one's economic position in society and will reject structural explanations of inequality, was not supported with these data. As a whole, university students are not being socialized to accept existing relations of dominance and subordination as reproduction theorists maintain.

Together, these basic findings require some interpretation. Although university students became more tolerant of racial minorities, less accepting of traditional gender roles, and expressed more concern over a range of social issues, they did not become less conservative in their views about the underlying bases of economic inequality. By viewing the two sets of measures used in this study as indicators of two different value dimensions rather than each as representative of a specific theory, the conclusion that university liberalizes students requires more specification. A university education appears to make students more tolerant and liberal in the realm of social attitudes but does not affect their economic attitudes. Thus, it is a mistake to assume that if attitudes become more liberal on one dimension, this represents a universal liberalizing effect.

In a sense, change in the reproduction measures may represent a more profound attitudinal change. In contrast to the social (enlightenment) measures, the indices of individual and structural explanations for inequality serve as a more fundamental test of attitude change. One can accept that the university makes people more tolerant, but this is a weaker effect in line with classic liberalism. But to find that the university also produces a more radical body of

thinkers who reject existing explanations of inequality would mean that a university education would have a stronger effect than enlightenment theory maintains. Since attitudes do not become more liberal on this dimension, however, we can conclude that the liberalizing effects of a university education are not as strong as initially suggested by a review of the existing research.

We found relatively little evidence of the self-selection of more liberal respondents into university. Few consistent differences were found between the baseline attitudes of university and non-university respondents. This is interesting since the two groups differed in other ways. Perhaps the most important of these differences is the fact that university students tended to be from higher socio-economic backgrounds. On this basis alone, one would think that the attitudes and values held by those who went on to continue their education in university would be different. For example, those respondents whose parents had a university degree were much more likely to attend university themselves. To the extent that education enlightens, we would presume that the attitudes of students' educated parents were more liberal and that they would be passed on to their children, at least partially. Nevertheless, the relative absence of selectivity bias between the two educational groups does not take away from the importance of controlling on baseline attitudes. The use of panel data to examine the effects of attending university allows us to measure change in attitudes. This can only be done by incorporating the attitudes of respondents at the beginning of the study into the analysis.

The finding that university-educated respondents became less accepting

of traditional gender roles and gender inequality is important for two reasons. First, with the recent exception of Kane (1995), few studies that examine the effects of education on attitudes have included a measure of attitudes towards gender issues. Second, this finding adds strength to the contention of enlightenment theory of the universal liberalizing effect of education. Not only did the students become more tolerant of racial minorities, as the results of many other studies have shown, but we can now add the category of gender to the repertoire of attitude domains that is affected by attending university.

Contingencies of Attitude Change

The general finding of the enlightening effects of university, at least in the realm of social attitudes, was enhanced with the results of several additional avenues of exploration presented in Chapter 7. First, the tests for differences in attitude change on the basis of program of study found that business students were more likely than any other students to adopt an individual or conservative stance towards economic inequality and less likely to favour structural policies to reduce inequality. In fact, on many attitude measures, business students were also more conservative than non-university respondents in the last year of the survey (for 3 of the 5 enlightenment measures for the 4-year data and for both reproduction measures for both samples.) Thus, even though a self-selection of conservative-minded respondents into business programs was found for most attitude measures, participating in this particular curriculum appears to foster increasingly conservative attitudes. Business faculties appear to both attract and

promote conservatism.

Some caution should be taken in singling out business faculties as unique in promoting conservatism. The collapsing of university programs into four rather crude categories in this study may be hiding other programs that have similar effects on students' belief systems. This is most probable within the professional category where, for example, engineering students are grouped with nursing students. Engineering faculties may be more likely to foster conservative gender-role attitudes. Unfortunately, limited sample sizes did not allow engineering students to be separated out as a single category. On the other hand, business is a more uniform category and has therefore allowed us to examine the effects of participating in this program without contamination from other programs.

The self-selection of students into programs is consistent with the assumptions about the ideology promoted in each program. For example, liberal arts programs were assumed to foster a more liberal ideology than business faculties, and accordingly, arts students were slightly more liberal before they entered their program than business students. One notable exception to this tendency was found among professional students who entered into their programs with very liberal attitudes, but emerged at the end as relatively conservative thinkers. This is interesting and suggests that something about the experience of taking medicine, engineering and other professional programs promotes conservative thinking. Even more interesting is the fact that more liberal students are attracted to these programs which then, in turn, appear to

erode their liberal tendencies. Yet, if this is the case, then why are liberal students attracted to these programs in the first place? As mentioned earlier, the heterogeneity of this program category makes it difficult to interpret the findings. Even so, this finding raises a whole series of interesting questions about the ideological images that different university programs foster, as well as the extent to which people choose programs that they assume will be congruent with their own ideologies, if they are chosen on this basis at all. Yet, if we examine the selectivity bias of the other three programs of study, they are in line with the ideological assumptions expected in each program suggesting that there is some correspondence between a particular program's value system and the attitudes held by students who enter that program. Next to professional students, arts students were the most liberal in 1985, followed by science and business students. On this basis, we might speculate that professional students somehow mistakenly assumed that the professions would be more in line with their own way of thinking than they actually turned out to be. It may be that the images promoted by these programs contradict the reality of the attitudes and values that they foster. For example, medicine is often depicted as a caring profession. In the minds of prospective students, the occupation of saving people's lives may seem to be in line with a compassionate stance towards those less fortunate (e.g., minority groups). Yet, the data suggest that this image may not be fostered within the program.

As discussed in earlier chapters, this research was not designed to directly test how attitudes change (see Chapter 3, "The Black Box"). Yet, the

findings of a difference in attitude change on the basis of program of study provide a basis from which to speculate about the mechanisms of attitude change. Since we have observed program differences between business and other students, there must be something unique about the structure, culture or curriculum in business programs. Here we can draw upon the reproduction theory argument that students in business programs are more likely than other students to identify with the idea that their education will lead to individual success in the competitive labour market, and that this will lead them to favour explanations of individual ability over systemic or structural determinants of success. Yet, since other programs, such as professional programs, are also geared to labour market success, the ideology of individualism must be more explicitly or intensely fostered within business schools. Thus, it is probably an ideology that is imparted on several levels—through professors , curriculum, and even extra-curricular activities.

On the other hand, since no important differences were found between the other three programs of study, the extent to which the sub-cultures of each program are a factor in attitude change should not be overstated. Moreover, as the findings from Chapter 6 show, university students change their attitudes and values in a different direction than do non-university respondents. This suggests that students' social attitudes and values are also shaped by a more general cultural milieu found on campuses. With regard to increased tolerance towards racial minority groups, this may be because of the increased exposure that students have to visible minorities, primarily as a result of the attendance of

foreign students. Alternatively, and particularly with regard to gender issues, at least part of the cultural dynamics within the university is characterized by concerns of the 'cultural left' movement which has tried to make this institution more inclusive, diverse and egalitarian (Emberly, 1996). Within such an environment, the message that women and men deserve equal treatment can be spread in a variety of ways (e.g., through curriculum, policy, resources and on-campus media)[1].

Thus, we have evidence that the university is a site of both global (campus-wide) and local (program-specific) socialization. Moreover, these examples of possible sources of attitude change point out that education is not strictly a matter of learning what is contained in books, but also involves exposure to an environment of cultural diversity, critical movements and ideological perspectives. These conclusions, however, are merely suggestive since the mechanisms of attitude change were not directly tested in this study. Thus, these findings indicate a possible direction for future research.

Based on the results of the crosstabulations, it was predicted that a university education is not linearly related to a positive change in attitudes and that later years of university would lead to the greatest change in attitudes. Yet upon examining the pattern of change, it was found that the strongest liberalizing effect occurred among those students with only a few years of university. But this also seems to be the group who were the most likely to lose these liberal attitudes. In opposition to the declaration of some researchers that education produces lasting positive effects in the realm of values (e.g., Hyman and Wright,

1979), this study showed that post-university experience leads to some loss of liberal attitudes. Whether the same rate of loss of liberal attitudes takes place among those with more years of university could not be determined with this data set. Nevertheless, the available data suggest that although attending university for longer periods does not add substantially to students' liberal tendencies, it might serve to internalize those same attitudes so that they are more entrenched and longer lasting.

These findings not only speak to the lasting effects of attending university on attitudes, but also indicate that socialization does not end with schooling. In the life course literature the examination of socialization is concentrated upon the younger years of life. Yet there is a growing body of research showing that experiences during young adulthood can dramatically affect attitudes and values (Alwin, Cohen and Newcomb, 1991; Jennings and Niemi, 1975; Cutler and Kaufman, 1975). This research adds to this literature by illustrating that the continuation of socialization into early adulthood can be profoundly influenced by lifecourse events such as schooling.

Finally, a university education can be distinguished from other post-secondary schooling in terms of its enlightening effects on attitudes. Results of the regression analyses substituting years of university education with years of other post-secondary education revealed that students who attend college or technical institutions tend to become more conservative in their attitudes. Thus, the university continues to be a unique post-secondary institution of enlightenment. However, by extension, this could mean that as universities

become more like their technical institutions and college counterparts (e.g., more applied and less academic), there is a threat that the liberalizing tendencies of universities will be lost.

Together, these results depict the university as a unique site for the socialization of youth into more tolerant and liberal-minded citizens. This statement, however, requires some qualification. First, these liberalizing effects were not found for the two reproduction indices measuring perceptions about the underpinnings of economic inequality. Thus, the enlightenment of students may not be as profound as it could be. Second, not all students were socialized in the same direction. Notably, in line with the predictions of the contingency model, business students tended to become more conservative in their views towards minority groups and economic inequality. Third, the first couple of years of university have the strongest liberalizing impact on students' attitudes, but there appears to be some retrenchment of these new-found views once students are exposed to the labour market after attending university. This suggests that the effects of education on values are not immutable. Finally, the university can be distinguished from other post-secondary institutions in its socializing role of enlightening students. Similar attitude change was not observed among young people who attended colleges and technical schools.

THEORETICAL IMPLICATIONS

Within the realm of structurally-oriented explanations of social life, the reproduction and enlightenment literatures are representative of two major

paradigms within sociology. The theoretical positions on education presented by enlightenment and reproduction theorists parallel the classic debates between these two perspectives. This research project juxtaposes the functionalist proposition that social order is fundamentally anchored in an overarching consensus of attitudes that serves to promote social harmony and cohesion with the Marxist argument that the ideology of the ruling class serves to maintain its privileged position. Thus, results of this inquiry bear on the more general question of whether the university is fundamentally an instrument of elitism or equality.

The findings that students become more liberal suggests, according to many enlightenment theorists, that the university reduces social inequality by producing a new class of open-minded and more tolerant citizens. The reality of the relationship between being open-minded and tolerant and the reduction of inequality, however, rests, in part, on the extent to which attitudes are related to behaviour. Yet, the socio-psychological research on the attitude-behaviour relationship is unclear: although some authors (e.g., Ajzen and Fishbein, 1981) claim that attitudes can predict behaviours under specific conditions, other researchers have found no relationship. On the other hand, while not all university graduates would be expected to be socially active, activists do tend to be more highly educated. Gouldner (1979), for example, cites several examples illustrating that social radicals tend to come from highly educated backgrounds. Thus, since this research does not examine the behaviour of students we must be careful in our conclusions about the link between liberal attitudes adopted by

students and their social behaviour. This does not mean, however, that some university-educated citizens will not become social activists.

Reproduction scholars maintain that students come to identify with the dominant value of individualism perpetuated within the university. To the extent that the foundations of the university rest on the belief that obtaining a higher education is essential for success in the labour market, it is argued that students increasingly internalize and identify with the dynamic of individual ability. The strong link between attending university and individualism also means that social or structural explanations for inequality are more likely to be dismissed by students.

Strictly speaking, this study does not support the contention that the university is a site for the reproduction of an elite class whereby existing notions of dominance and subordination are reinforced. As mentioned earlier in this chapter, however, the two theories can also be positioned hierarchically rather than being seen as opposites as they were in the preceding paragraphs. It has been conceded by recent reproduction theorists that higher education may lead to a greater commitment to the idea of equality as a positive value, (e.g., Jackman and Muha, 1984; Kane, 1995). But, it is further contended that these ideals are unlikely to counter the dominant ideology of the ruling class. The university educated may be against inequality in principle (as indicated by their liberal attitudes regarding racial and gender inequality), but they are not willing to sacrifice their own elite status by advocating structural changes that attempt to reduce inequalities. Therefore, it could be argued that the positive attitude

changes found in this research are superficial. Students can maintain their privileged status without sacrificing their newly acquired sensibilities towards less advantaged groups. Although students in this study did not come to identify with structural views of inequality, neither were they more likely to adopt individual explanations for inequality. According to reproduction theory, this only means that the university does not socialize students to become ardent individualists who support existing relations of dominance.

The finding that business students become more attached to individual explanations for inequality and less in favour of structural policies, also makes a strong case for retaining the general ideas of reproduction theorists, but with some modification. That is, the university as an institution does not foster individualism, but there are programs within the university that are more likely to legitimate inequality through the promotion of individualism. In contrast to other program areas, business faculties are structured towards the needs of capital by reflecting the values of the dominant class.

In summarizing the implications of this research for the two theories of higher education, I conclude that enlightenment theory receives some support. However, in line with the arguments of reproduction theory, the extent of liberalization of students' attitudes does not extend to them accepting structural policies to reduce inequality. On the other hand, I maintain that the finding of increased liberal attitudes towards minority groups may not be as superficial as some reproduction theorists might contend. Rather, by taking the findings of enlightenment toward minority groups at face value, I maintain that the fostering

of positive attitudes towards minority groups is a meaningful socializing role of university education.

Finally, in addressing the general question of whether the university is an instrument of elitism or equality, the results of this inquiry suggest that it is both, but that neither forces are very powerful. The enlightening effects found for attitudes towards minority groups suggest that equality within the realm of ideas is fostered. However, since the belief that economic equality should be reduced through structural means is not fostered in the university, I conclude that the effects on inequality are not strong. Moreover, the idea that economic inequality is justified through individual differences in achievement that was found among students in business faculties supports the notion that the university has pockets of elitism, but it is not generally an institution that strongly embodies the maintenance of privilege by the ruling class.

SCHOLARLY CONTRIBUTIONS

This analysis of the socializing effects of the university has made three important scholarly contributions. First, by using data from a recent longitudinal study of Canadian youth whose attitudes on a number of social institutions and groups were solicited upon graduation from high school and then several times over the next seven years, the causal effects of university education were more firmly established. This is particularly important for Canadian sociology where longitudinal data sets tend to be rare.

Second, compared to previous research, the attitudinal measures are

more comprehensive (e.g., gender issues are included) and a deliberate effort has been made to construct the dependent variables by considering both measurement issues and theoretical constructs. Because this study uses secondary data, however, progress in overcoming the measurement inconsistencies and lack of specificity that characterize much of the research on the effects of education is unfortunately, limited. These limitations will be discussed in greater detail below.

Third, the study provides a much-needed current Canadian examination of the socializing role of the university. Broadly speaking, today's social, political and economic context is quite different from the more liberal era characteristic of the 1960s and 1970s. The Trudeau years, for example, were a time when there was more emphasis on building a 'social safety net' with an eye to reducing economic inequality. This was also the period where the many disadvantages faced by racial minorities and women became publicly acknowledged and programs and policy initiatives were implemented to produce a more even playing field for minority groups. In contrast, the 1980s and early 1990s marked a reversal for many of these programs and policies, due to pressures of deficit reduction and global competition.

This changing environment has not only affected the relative independence of the university, but also may have taken a slightly different course in Canada than in the United States where most of the research on the effects of education on attitudes has been conducted. First, Canada trailed the U.S. in the movement to the right. Canada, it has also been argued, is more

receptive than the U.S. to a social-democratic form of politics (e.g., it has a more developed welfare-state, more extensive state-ownership of industry and more unionized labour) (Lipset, 1990; Myles and Wallace, 1994)[2]. Also, the American post-secondary system is different from Canada's. Not only is there greater academic diversity among American universities but American colleges and universities are less distinguishable from each other than is the case in Canada where technical schools and colleges are more applied and less academically oriented than universities. Thus, these differences between the two countries are sufficient to refrain from generalizing to the Canadian context the findings of research that has employed American data.

POLICY CONTRIBUTIONS AND DISCUSSION

In terms of policy contributions, this research highlights the need for a discussion on the role of the university at the broadest level, and leads to a whole cluster of questions that are rarely asked even within the university community itself. To date, the socializing effects of the university have been conspicuously absent from debates. But evidence that attending university leads to more liberal and tolerant attitudes is an important finding that needs to be considered when discussing the future direction of this institution of higher learning. At the very least, the findings should open up discussions as to the purpose of the university, a clearly worthwhile exercise. By recognizing that the university transmits social and economic values, the burden of acting on this information is placed upon the university community and policy makers.

Three issues need to be considered. First, while we like to think of the university as an autonomous institution, the historical discussion clearly suggests that the university does not operate in isolation from the rest of society. Recognizing this, does the university have a moral obligation to society to ensure that its students are equipped, not only with the technical skills required to function successfully in the labour market, but also with a certain degree of social awareness? If the answer is 'yes', then the university must become more self-reflective as to what kinds of values and beliefs it might want to encourage[3] and consider whether or not it should be a place of cultural and social growth (both individually and socially). In other words, we need to address the arguments of educational philosophers that the role of the university should be to cultivate the talents and sensitivities of students at a holistic level, not merely to train them for the labour market.

At the very least, the distinct role of the university should not be overlooked as pressure is applied to make post-secondary education more accountable. Policy initiatives designed to make universities more responsive to the needs of the labour market blur the functional lines between different types of post-secondary institutions. And as this study found, one of the qualities that distinguishes the university from other post-secondary institutions is the role it plays in socializing students to become more liberal in their attitudes. Thus, we need to ask whether the unique contributions that the university makes both at the individual and societal level are worth fighting to preserve.

These considerations must be applied university-wide as well as within

disciplines, and perhaps most importantly within business faculties. To the extent that our economic system is based on the principles of individual achievement, it is no surprise that these programs foster an individualistic stance towards economic inequality.

Second, we need to examine the mechanisms within the university that help facilitate a change in attitudes and perhaps become more purposeful about supporting the mechanisms. Since this study shows that the university has a liberalizing effect on some social attitudes, the university community and the larger society will have a known basis from which to explore the mechanisms of change--in other words, the mechanisms become the most important focus of future research and discussion. The examination of the precise ways and locations of attitude change becomes even more crucial when considering that other post-secondary institutions do not appear to foster the same liberal attitudes.

Third, and perhaps most importantly, concerted and purposeful effort to include these two issues in policy discussions will be necessary. In light of the current single-minded emphasis of governments on fiscal considerations, this will not be a trivial feat. One step in this direction might be to educate the larger community about the less tangible benefits of attending university that were found in this research project. In the words of critic Peter Emberly, we need to ask ourselves if we are willing to leave "the formation of civic virtue and intellectual or spiritual purpose, to accident or destiny? (Emberly, 1996: 172).

Finally, among all post-secondary institutions the role of the university is

perhaps the least understood. The results of this research, however, bear on what Emberly (1996) has called the 'mystique' of the university. Yet, he is hard pressed to define this 'mystique' conceding that it is an illusive concept that is often only understood by those residing within the halls of the university. It is something that distinguishes the university from the college. It is something that revolves around the magic of heated inquiry and serendipitous avenues of exploration. It is something about the examination of existing social conditions and even scientific principles with a spirited drive of unending questions. It is a culture that is unique to the university, but one that is sadly being threatened as the 'bottom line' approach increasingly pervades its walls. Yet, since the social values of those who attend the university are changed by this 'mystique', we have some indication of its effects. Its outcomes are measurable and can help demystify the illusive character of the culture of university. This knowledge equips defenders of a liberal education against those who are committed to transforming the university into a commodity, with concrete evidence that it possesses virtues distinct to the idea of higher learning.

STUDY LIMITATIONS AND IMPLICATIONS FOR FUTURE RESEARCH

As mentioned in Chapter 3, there are many limitations that have plagued research in this area. Although several improvements in this research project contribute to a more solid test of the two major theories of the effects of university education on attitudes, some problems remain. Most of these result from using secondary data to answer questions that were not built into the

original survey design.

Even though this study added gender issues to the repertoire of attitudinal domains, the measures used could be improved. Some of the measures may not be capable of tapping into more subtle differences in attitudes. Recall, for example, from the regression results on attitudes towards racial minorities in Chapter 6 (Tables 6.6 and 6.7) that education had no positive effect on the statement that racial discrimination is a problem. This finding departs from the positive effects found for education for the other two more specific measures of racial attitudes asking respondents whether or not they thought discrimination against Native Canadians was a problem and whether or not they thought that too many immigrants were getting jobs in Canada.

Perhaps the most serious measurement problem resides in the two indices of structural and individual views of economic inequality. In other words, the fact that the reproduction measures showed mixed results may not be because the theory is misspecified, but because the measures do not adequately capture the meaning of market-place individualism. For example, two of the three variables comprising the index measuring individual explanations for inequality dealt with unemployment and welfare recipients. This measure could have been enhanced by broadening the repertoire of attitudes to include such concerns as underemployment, union power, and more generally, income disparity. In addition, it would have been helpful to have measures that operationalize the extent to which students adopt structural policies to reduce inequality to racial and gender inequality as well.

As mentioned earlier in this Chapter, the broad categorization of program of study may also be problematic. That is, possible differences between programs subsumed under one of the four rather broad program of study categories may not have been detectable.

The results of this research can be generalized to university students residing within the three cities of Edmonton, Toronto and Sudbury. The extent to which they would also apply nation-wide needs to be addressed. Although these metropolitan centres may not be totally representative of all cities with universities across the country, it is maintained here that with respect to attitude change, Canadian universities probably do not differ in substantial ways. However, regional differences in the larger environment within which the university resides may inhibit or enhance the transference of liberal values. For example, the social values that characterize the prairie provinces may be distinguished from those found within the Atlantic provinces and also in the province of Quebec (Fletcher and Forbes, 1990; Baer, Grabb and Johnston 1993). Consequently, it is recommended that future research that examines the effects of university on attitudes draw upon a more nationally-representative sample.

Perhaps the most important implication of this study for future research concerns the need to explore the possible ways that attitudes and values are transmitted in the university. This study indicates that this occurs university wide but also varies by program of study. Exactly how values are transmitted, however, remains unclear. Whether it is through increased exposure to diverse perspectives about the world in general, or to minority groups specifically, or whether it is through the provision of cognitive skills that enhance student's capacity to detect and then reject inequality is unknown.

Also, since much of the restructuring of the university has taken place in the 1990s and will likely continue into the next century, future research needs to use data from this period. The 7-year sample used in this study covered the first few years in the 1990s, yet this was the period where restructuring was primarily in a formulative stage. If the concerns that have been raised in this thesis over the effects of restructuring on the less tangible aspects of higher education are to be more thoroughly examined, up-to-date data needs to be collected[4] and analysed. At the very least, however, this study can serve as a benchmark with which future findings can be compared.

Finally, the limitations of this research can be situated within the broader dilemma of trying to measure something that is rather abstract—namely, ideas. This kind of exercise necessarily involves using less-than-perfect measures to capture less-than-perfectly defined concepts. But, as a sociologist rooted in the tradition of giving meaning and life to numbers, this study represents an attempt to overcome, or at least work around, these issues.

ENDNOTES:

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1. Whether students internalize these messages depends on several things. Social psychologists, for example, note that attitude change depends on whether the message is direct or indirect. If it is direct, then the recipient attends to the message, attempts to understand it and then evaluates it. Indirect routes of attitude change include rewards and punishments associated with the message. (See Petty and Cacioppo, 1981 for a review of the different ways attitudes change at a psychological level).

2. Care should be taken not to exaggerate Canadian and U.S. differences, however, since this position is situated within a long-standing debate on the extent to which Canadian and American values differ. Lipset (1990), for example, has argued that the tension between individual rights and democratic principles in American history translates into a distinct set of social and political values compared to their northern neighbors. Baer, Grabb and Johnston (1993), however, have found evidence to suggest that regional differences within each country supersede national differences. Clement and Myles (1994) have also found evidence to support the notion that Canadians and Americans display a very similar class orientation (e.g., populism) and that any differences are a matter of degree rather than kind.

3. This does not mean that the university should become a site for social engineering, but only that we should be more conscious of the ways that it changes people's views of the world.

4. An extension of the survey used in this study is presently being conducted by Harvey Krahn and Graham Lowe.

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APPENDIX A
ATTITUDINAL MAP OF ITEMS

ATTITUDE	TRI-CITY 1985	1986	1987	EDMONTON 1989	1992
GENERAL SOCIAL PROBLEM INDEX	X	X	X	X	
INDIVIDUAL SOLUTIONS INDEX	X	X	X	X	X
STRUCTURAL SOLUTIONS INDEX	X	X	X	X	X
IMMIGRANTS - Too many immig. Getting jobs	X	X	X	X	X
GENDER ROLES: - Husband responsible For earning living	X	X	X	X	X
- Wife responsible For raising child.		X		X	X

APPENDIX B
ATTRITION BIAS ANALYSES
PERCENT REMAINING IN STUDY BY SAMPLE AND RESPONSES TO INDIVIDUAL ATTITUDINAL ITEMS

INDEX	TOTAL	4-Year EDMONTON	4-Year TORONTO	4-Year SUDBURY	7-Year TOTAL
GENERAL SOCIAL PROBLEMS INDEX: (HOW SERIOUS A PROBLEM IS:)					
RACIAL DISCRIMINATION?					
No Problem	37.7	50.7	29.1	29.3	40.7
Neutral	37.5	50.6	30.2	22.7	40.1
Problem	39.4	52.4	28.1	23.6	42.3
JOB DISCRIMINATION AGAINST WOMEN?					
No Problem	38.7	51.5	25.3	30.0	39.0
Neutral	36.8	49.6	27.3	20.6	40.4
Problem	39.4	53.5	30.3	22.5	43.3
POVERTY?					
No Problem	37.2	54.8	16.5	27.4	43.7
Neutral	35.9	47.6	30.0	20.3	38.3
Problem	40.4	53.1	31.1*	29.2	42.5
UNEMPLOYMENT?					
No Problem	32.8	60.0	16.7	26.7	45.0
Neutral	29.6	47.4	23.4	14.6	35.1
Problem	39.3*	51.6	29.9	21.4	41.6
DISCRIMINATION AGAINST NATIVE CANADIANS?					
No Problem	32.4	43.0	24.4	22.8	29.8
Neutral	40.9	53.1	29.7	29.7	46.0
Problem	38.8	53.0	29.7	23.6	41.5*

INDEX	TOTAL	4-Year EDMONTON	TORONTO	SUDBURY	7-Year TOTAL
INDIVIDUAL SOLUTIONS INDEX:					
POOR LACK EFFORT					
Agree	41.5	56.0	22.8	24.5	33.9
Neutral	38.7	51.6	26.5	29.5	41.1
Disagree	31.9***	43.5***	32.6*	23.4	45.6**
WELFARE TOO LAZY TO WORK					
Agree	40.9	56.7	29.1	24.2	37.7
Neutral	40.3	53.5	25.4	27.8	43.1
Disagree	35.4*	47.1**	27.6	26.9	45.2*
TOO EASY TO GET WELFARE/ UNEMPLOYMENT					
Agree	38.5	52.3	30.4	28.1	39.5
Neutral	39.3	54.8	26.9	20.8	42.2
Disagree	37.9	48.6	28.6	25.2	42.7
STRUCTURAL POLICIES INDEX:					
HIGH INCOME PAY MORE TAXES					
Disagree	37.3	48.4	25.0	25.7	38.6
Neutral	35.1	44.5	29.3	23.6	34.5
Agree	39.4	56.1*	28.6	27.0	45.7*
BIG CORPORATIONS TOO POWERFUL					
Disagree	39.8	50.0	34.0	28.8	39.6
Neutral	37.2	50.9	28.8	22.7	41.2
Agree	38.2	52.8	26.0	26.5	42.2

* $p < .05$
** $p < .01$
*** $p < .001$

APPENDIX C
COMPARISON OF EDUCATION PARAMETER ESTIMATES BETWEEN WEIGHTED AND UNWEIGHTED SAMPLES

	Tri-City (4-Year)		Edmonton (7-Year)	
	Weighted	Unweighted	Weighted	Unweighted
General Social Problems Index	.036***	.042***	N/A	N/A
Attitudes Towards Immigrants	.146***	.143***	.147***	.132***
Racial Discrimination a Problem	.028	.030	N/A	N/A
Treatment of Natives a Problem	.115***	.126***	N/A	N/A
Husband Main Income Earner	.095***	.091***	.053	.062*
Female Job Discrimination a Problem	.068**	.060**	N/A	N/A
Wife Responsible for Raising Children	N/A	N/A	.059*	.064**
Individual Explanations for Inequality	.058*	.073***	.051*	.051**
Structural Policies to Reduce Inequality	-.017	-.014	-.028	-.021

APPENDIX D
BREAKDOWN OF ACADEMIC PROGRAM[1]

Liberal Arts:

Arts
Fine Arts

Business:

Business/Commerce/Accounting

Professional Programs:

Engineering
Architecture
Law
Education/Physical Education
Medicine
Nursing
Other Medical (physio-therapy, speech pathology, etc.)
Library Science

Science:

Science (including pre-med, pre-veterinary, home-ec)
Computing Science
Earth Sciences (forestry, agriculture, etc.)

[1] The most recent program of study was used for students who had spent time in more than one program.